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THE

AMERICAN JOURNAL

OF THE MEDICAL SCIENCES

FOR JANUARY 1862.

ART. I.—*Statistical Researches relative to the Seat, Symptoms, Pathological Anatomy, Prognosis, Treatment, &c., of Intussusception in Children.*

By J. LEWIS SMITH, M. D., Curator to the Child's Hospital, New York.

INTUSSUSCEPTION, or the passage of one portion of the intestine into another, has been known as an occasional accident from the earliest history of medicine. Hippocrates himself, though debarred from the study of morbid anatomy, appears to have had a pretty clear idea of this lesion, and his practical mind suggested a mode of treatment which has not been improved upon to this day. Intussusception is sometimes trifling, attended by no symptoms, and disappearing on slight traction or motion of the bowels; at other times the symptoms are grave from the first, and if the patient survive, it is only through the tedious process of sloughing and adhesive inflammation. The following cases, of the severe form of intussusception, are all which I have been able to find in the American, British, and those continental periodicals to which I have access.

1. *Intussusception in the Small Intestines.*

CASE 1. Male, 12 years old, previously had pain in abdomen for two or three weeks. Symptoms, vomiting, thirst, constipation; a tube introduced per rectum met an obstruction at the distance of four inches; a hard mass detected below the arch of the colon on the left side; died the fifth day. Sec. Cadav. The upper twelve inches of the jejunum invaginated in the next twelve inches below; the whole mass firm, two inches in diameter, and its serous surfaces united by adhesions; no general peritonitis; lower end of the volvulus forced down into the pelvis, completely closing the sigmoid flexure and the rectum; two smaller simple intussusceptions were present in the small intestines. M. R. TREVOR, *Amer. Journ. Med. Sciences*, Jan. 1852, p. 277.

CASE 2. Male, 3 years old; previous health not stated. Symptoms, skin hot and dry, pulse full and frequent; tongue dry and furred; pupils dilated, pain in abdomen, spasms, opisthotonos; respiration hurried and laborious; died the second day. Sec. Cadav. At about the junction of the jejunum and ileum twenty-six inches of the intestine had been received into about six inches; these parts presented a slight blush of inflammation; immediately below the invagination the ileum was much inflamed, containing numerous lumbrici. ISAAC THOMAS, M. D., *Amer. Med. Recorder*, 1823, p. 285.

2. *Intussusception of Ileum into the Colon.*

CASE 3. Had previously suffered from constipation, followed by diarrhœa and convulsions. Symptoms, obstinate constipation, vomiting, tenderness in the left iliac region; little or no distension of abdomen; died on the fifth day. Sec. Cadav. "About two inches of the ileum were found projecting into the cæcum, in which it was firmly fixed." Dr. MAYNE, Path. Soc. of Dublin, March 16, 1839. *Dublin Journ. of Med. Sciences*, Jan. 1840.

CASE 4. Male, 2 years old; previously well. Symptoms, vomiting, abdominal pain, constipation; died in convulsions at the close of the second day. Sec. Cadav. Small intestines distended with flatus, and pale to within four inches of the colon, where the colour changed to dark red. Within the colon, close to the ileo-cæcal valve, a soft, solid body, about the size of a fowl's egg, was felt. This proved to consist of the terminal portion of the ileum, inverted to the extent of about three inches deeply plicated, and in a high state of sanguineous congestion. A little bloody mucus was found in the colon. Dr. COGGSWELL, Med. Society of London. *Lancet*, July, 1853.

CASE 5. Female, 4 years old; previously in robust health, excepting a slight tendency to diarrhœa. Symptoms, vomiting, thirst, pain and swelling of abdomen; countenance anxious; tongue moist, and slightly furred; surface hot; at first, jelly-like motions mixed with blood; near the close of life, scanty liquid motions, not tinged with blood; died quietly on the tenth day. Sec. Cadav. Intestines distended; no lymph in abdominal cavity; the cæcum distended and hard, and on opening it, the interior was found occupied by thirteen inches of the ileum doubled on itself. "This had descended through the ulcerated ileo-cæcal valve," and was dark red and swollen; numerous ulcers were observed in the small intestines, chiefly in the ileum, corresponding with Peyer's patches, but some in the jejunum; the invaginated intestine had become partially pervious, as was shown by the diarrhœa. Mr. FILLITER, *London Lancet*, May, 1855.

CASE 6. Male, 3 years old; previous condition not given. Symptoms, one free motion, then constipation, vomiting, especially after the third day; stercoraceous on the sixth day; thirst, quick, feeble pulse, pale countenance, tenesmus; no hardness of abdomen, but meteorism towards the close; no marked tenderness on pressure; died exhausted after seven days. Sec. Cadav. Small intestines distended with flatus, but free from feculent matter; at least a foot of the ileum had passed through the ileo-cæcal valve; the peritoneum was in the natural state, and no lymph or fluid was observed; large intestines contracted and empty. Mr. NUNNELY, Path. Soc. London, March 20, 1860. *Med. Times and Gaz.*, April 28, 1860.

CASE 7. Male, 4 months old; previously healthy. Symptoms, vomiting, constipation, passed a small quantity of blood and mucus, with much tenesmus; in three days the action of the bowels was restored, and these

symptoms subsided. Three weeks subsequently, the symptoms returned, and again, after three days, an evacuation was obtained, and the vomiting abated. The bowels now remained open, but there was severe tenesmus, and twenty-seven days after the commencement of this last attack, a portion of the bowel protruded from the anus, measuring finally six inches. This became partially gangrenous, but he lived seventeen days longer, or six weeks from the commencement of the last attack. Sec. Cadav. Intussuscepted part consisted of the ileum, which had been protruded through the entire colon; this was shown to be pervious by the probe, and in it was a small quantity of yellow, feculent matter; the invaginated portion at about its middle, was gangrenous to the extent of one and a half inches. SYDNEY JONES, London Path. Soc. *Lancet*, April, 1857.

CASE 8. Male, 6 months old; previously healthy. Symptoms, thin fecal and bloody dejections, restlessness, nausea, no real tenesmus, but an "incomplete, abruptly-ending strain;" no marked heat, tenderness, or fulness of abdomen; died the third day. Sec. Cadav. The ileum had passed through the cæcum and into the ascending colon; it was congested, but was drawn out with little effort, and was not strangulated; Peyer's patches were much developed, softened, and containing red points; there was lymph on the surface, and the passage was still open through the intussusception. Dr. COTTING, Roxbury. Boston Soc. for Med. Improvement, July, 1852.

CASE 9. Male, 4 years and 9 months old; at the age of six months had inflammation of the lungs, and had been subject to a cough since; from the age of eighteen months had been troubled with ascarides; the day before the attack complained of soreness about the anus, and ascarides were found on examination. Symptoms, great pain in lower part of abdomen; tenesmus; passed at first one or two fecal masses, and then clots of blood and mucus; thirst, vomiting, countenance anxious; abdomen finally tympanitic and tender; died the fifth day. Sec. Cadav. The ileum had protruded through the ileo-cæcal valve to the extent of three and a half inches, or seven inches in entire length, and its mucous surface contained shreds of lymph; stomach and ascending colon distended with gas, and the latter displaced so as to occupy nearly the place of the transverse portion; no lymph and scarcely any effusion in the peritoneal cavity; intussuscepted portion firmly fixed and swollen, and of a deep red colour, while the colon generally was pale; at the middle of the ileum a slight intussusception; solitary glands and those of Peyer diseased in the ileum. Dr. HARE, Lond. Path. Soc., Oct. 16, 1848.

3. *Invagination of the Cæcum—Cæcum and Ileum; or Cæcum, Ileum, and Colon.*

CASE 10. Male, aged 5 months; previously healthy. Symptoms, constipation, vomiting, dejections of blood and mucus; hiccup the last three days; a tumour on left side of abdomen the size of an egg; died the fifth day. Sec. Cadav. Six inches of the ileum and the ascending and transverse colon were invaginated in the sigmoid flexure and the rectum; intussuscepted portion black; ten or twelve inches of the ileum above the intussusception inflamed slightly; other organs healthy. THOMAS BLIZARD, *Med. Chir. Trans.*, vol. i. p. 169.

CASE 11. Age 4 months; during the first eight or ten weeks of its life was sickly, having, according to the mother, at one time symptoms similar to those with which it died, but since the age of ten weeks, appeared per-

fectly well. Symptoms, frequent and abundant dejections of blood, which, near the close of life, was fetid, and of a dark brown; vomiting of greenish-yellow matter, slightly mixed with blood; no fecal stools; face pallid; pulse frequent; abdomen distended and tender; occasionally violent screaming, and in the interval no appearance of suffering; lived more than a week. Sec. Cadav. Stomach healthy, excepting a few vascular streaks; small intestines much distended; a small portion of the ileum and the entire colon to the sigmoid flexure, imbedded in the latter, and gangrenous; adhesions and coagula in the mass; rectum contracted. ALFRED MARKWICK, *Lancet*, 1846.

CASE 12. Male, 1 year old; had diarrhœa previously. Symptoms, paroxysms of intense pain; vomiting at first, then stomach retentive; one dejection, then obstinate constipation; motions of mucus and blood; emaciated; collapse and death on the seventh day. Sec. Cadav. A portion of the ileum and cæcum were invaginated in the ascending and transverse colon; descending colon contracted; the invaginated intestine extremely congested and swollen, and containing two orifices, one leading to the ileo-cæcal valve; the other to the appendix vermiformis. Dr. O'FERRALL, Path. Soc. Dublin. *Lond. Med. Times*, Jan. 16, 1847.

CASE 13. 6 months old; bowels previously irregular. Symptoms, paroxysms of pain; motions of blood and mucus; vomiting; face pallid; left side of abdomen hard and prominent; died the third day exhausted. Sec. Cadav. Intestines inflated with gas; a few ounces of brownish serum in the abdominal cavity; several inches of the ileum, the cæcum, the appendix vermiformis, the ascending and a portion of the transverse colon, were "protruded into the remainder of the transverse and the descending colon;" the incarcerated portion engorged and covered with ash-coloured lymph; traces of peritonitis at the strangulation; a slight doubling in of the rectum had also occurred. CHAS. CLARK, *Lancet*, Aug. 18, 1849.

CASE 14. 4 months old; previously healthy. Symptoms, paroxysms of pain; one dejection from oil, then scanty passages of blood; vomiting, but not at first; prostration; no tenderness or distension of abdomen at first; finally distension; died exhausted on the third day; the invaginated intestine could be felt by examination per anum. Sec. Cadav. Six ounces of clear serum in the abdominal cavity; no lymph on the peritoneum; much flatus in the intestines; stomach, duodenum, and jejunum healthy; five points of intussusception in the upper part of the ileum, easily drawn out; the lower third of the ileum, the cæcum, ascending and greater part of the transverse colon, were imbedded in the descending portion; the invaginated portion partly gangrenous. E. Y. STEELE, *Lancet*, June 23, 1849.

CASE 15. Male, 4 months old; unwell for two days previously. Symptoms, vomiting; one pretty copious sanguineous stool, then constipation; paroxysms of pain; tympanites; anxious countenance; died exhausted on the third day. Sec. Cadav. Intestines distended with flatus; coagulated blood in the sigmoid flexure; cæcum and ascending colon invaginated in the transverse and descending portions, and of a deep purple with ash-coloured patches of gangrene. P. P. NIND, *Lancet*, June 23, 1849.

CASE 16. Male, 20 months old; previous condition not stated. Symptoms, severe pain in abdomen; no tenderness; a tumour distinctly felt on the second day in the right iliac region; vomiting; constipation; no tenesmus, and no discharge of bloody mucus from the bowels; abdomen not distended; died on the fourth day. Sec. Cadav. Six or seven inches of the lower portion of the ileum, the cæcum, and the ascending colon were filled

with inverted intestine; the six or seven inches of the ileum were puckered so as to measure only one inch, and this part of the ileum had formed a second invagination in the cæcum to the extent of two inches; the incarcerated intestine was in a state of gangrene; colon, below the intussusception, healthy, but contracted. Mr. TAYLOR, *Lancet*, 1843.

CASE 17. 4 years old; previous condition not stated. Symptoms, vomiting; evacuations of blood and mucus; lived three days. Sec. Cadav. The lower part of the ileum, the cæcum, and the colon, were all invaginated in the rectum; adhesions in the lower part of the mass, but not in the upper. W. S. PARTRIDGE, *Prov. Med. and Surg. Jour.*, May 3, 1848.

CASE 18. Female, 5 months old; previous condition not stated. Symptoms, restlessness; little fever at first; vomiting; constipation; tenesmus; the intestine protruded an inch below the anus by straining. Sec. Cadav. About one inch of the ileum, the caput coli, and the colon as far as the left hypochondriac region, were lodged in the remaining portion of the colon and the rectum; the cæcum and the colon were inverted, the former being the part which protruded from the anus; the cæcum was thickened from inflammation, and with a part of the colon was gangrenous. R. HARLAN, M. D., F. R. S., *Med. and Phys. Researches*, page 565. Philadelphia, 1835.

CASE 19. Female, 6 years old; previous condition not given. Symptoms, having eaten raw carrots was seized with pain which continued more or less for eight months, when she died; the stools during this period numbered about three daily, and were thin, and during the last three months were mixed with mucus and blood. Sec. Cadav. The caput coli and the first half of the colon had descended through the other half and the rectum; the lower part of the ileum was "drawn down through the centre of the intussusception to the anus." Mr. DAVIES, *Med. Repos.*, Dec. 1824, and *Medico-Chir. Rev.*, 1825.

CASE 20. Male, 9 months old; previously well, except a tendency to relaxation of the bowels. Symptoms, severe paroxysms of pain, but quiet in the interval; vomiting; no fecal stool, but scanty motions of blood and mucus; tenesmus; abdomen distended towards the close of life, but not tender; little or no emaciation; died the third day. Sec. Cadav. Small intestines distended with flatus; a considerable portion of the ileum and the caput coli had been forced up the ascending colon, across the transverse, and low down into the rectum; incarcerated portion of a dark colour and the mucous membrane softened, swollen, and engorged with grumous blood; the remainder of the small intestines and the stomach healthy. H. CUNNINGHAM. *Lond. Med. Gaz.*, Sept. 15, 1838.

CASE 21. Male, 4 months old; previous condition not given. Symptoms, had one abundant fecal evacuation, and then obstinate constipation; passed mucus and blood; tenesmus; cried much from pain; died the fourth day. Sec. Cadav. The lower portion of the ileum, the caput coli, the ascending, and a part of the transverse colon, were invaginated in the remaining portion of the colon and the rectum. The incarcerated intestine was tumefied and thickened. ALEXANDER MONRO, *Path. Anat. of the Alimentary Canal.*

CASE 22. 4 months old; previously well. Symptoms, great abdominal pain; two bloody evacuations; died the third day. Sec. Cadav. Small intestines much distended with fluid and flatus; descending colon, blanched and empty; the cæcum and the ascending colon were lodged in the transverse and beginning of the descending portions; the vermiform appendix partially drawn in, protruded from the mass; in the interior was found a

second invagination, that of the ileum, so that there were in some places seven (five?) layers. "This invaginated portion from beginning to end looked like a dark and firm clot of blood. This was owing to the structure of the intestine, being broken up, congested, and infiltrated with blood." Dr. RYAN, Med. Soc. of London, Oct. 27, 1835. *Med. Times and Gaz.*, Nov. 3, 1835.

CASE 23. 4 months old; previously well. Symptoms, occasional vomiting; feculent dejections, mixed with blood; pulse small and rapid; died on the second day. Sec. Cadav. A part of the ileum, the cæcum, and a considerable portion of the colon were invaginated; no peritonitis. Dr. EVORY KENNEDY, Path. Soc. of Dublin. *Dublin Journal of Med. Sciences*, March 1, 1844.

CASE 24. Female, 7 months old; previously well. Symptoms, vomiting; one scanty dejection of yellow matter mixed with mucus; pallor; no distension of abdomen; pulse feeble; pupils contracted; died the third day in collapse. Sec. Cadav. A portion of the ileum and the cæcum had descended through the colon and rectum, to within half an inch of the anus, doubling the colon on itself; the lowest portion of the volvulus was the cæcum, and the ileum had not passed through the ileo-cæcal valve; invaginated portion of a dark colour, and the lower end sloughy; a slight deposit of lymph on the adjacent serous surfaces. Dr. BUCHANAN, London Path. Society, May 3, 1859.

CASE 25. Female, 6 months old; previously well. Symptoms, vomiting, tenesmus, and pain in abdomen; pallid countenance; evacuation of blood-stained fluid, but no feces; died the fifth day. Sec. Cadav. A few drachms of brownish serum, in the peritoneum; small intestines distended and congested; a part of the ileum, and the whole upper portion of the large intestines, were invaginated in the descending colon and the rectum, to within two inches of the anus, and were very dark; the descending colon and the rectum were much puckered. Mr. BALLARD, London Path. Society, Jan. 6, 1857.

CASE 26. 3 months old; previously healthy. Symptoms, convulsions at first; vomiting; one healthy evacuation, then bloody stools with straining; abdomen not hot or tender; skin cool; countenance of distress; died the third day. Sec. Cadav. Stomach empty and collapsed; ileum distended with air and feces; a part of the ileum, the cæcum, ascending and transverse colon, were lodged in the descending colon, as far as the sigmoid flexure, and were deeply congested, having patches of extravasated blood. J. W. PERRIN, *Lancet*, March 26th, 1853.

CASE 27. 3 months old; previous condition not given. Symptoms, vomiting, abdomen tender; severe paroxysms of pain; one fecal evacuation, and afterward, stools of blood only; died the first day. Sec. Cadav. Stomach and small intestines distended with gas; a large part of the ileum, the cæcum, the ascending and the transverse colon, dark and almost gangrenous, were invaginated in the descending portion; the volvulus extended six inches below the sigmoid flexure; no fibrinous exudation. M. JUDSON, *Gaz. Méd. de Paris*, Dec. 1837.

CASE 28. 3½ years old; previous condition not stated. Symptoms, almost constant pain in the bowels for three months; vomiting; during the last four days of his life, a portion of intestine protruded from the anus. Sec. Cadav. The cæcum and the entire colon, to within eleven inches of the anus, were invaginated in the remainder of the colon and the rectum, and

protruding five or six inches beyond the anus; the parts were united by strong adhesions. M. ROBIN, *Mém. de l'Acad. Roy. de Chirurg.*, 1784.

CASE 29. 4 years old; had previously an attack of dysentery. Symptoms, vomiting, fever, tenesmus, with intervals of relief; emaciation; died after sickness of nearly a month. Sec. Cadav. Half an ounce of thin pus in abdomen; the caput coli, ascending and transverse colon, were found in the sigmoid flexure and rectum, nearly reaching to the anus; the ileum extended uninverted through the entire invagination; the inclosed colon was very vascular, and for three inches gangrenous; the ileum, above the invagination, was much distended. JOHN C. LETTSOM, M. D., F. R. S.

CASE 30. 9 months old; previously delicate, but free from disease. Symptoms, convulsions, vomiting, pain; anus patulous, and a tumour visible within; died in collapse, the beginning of the second day. Sec. Cadav. Six inches of the ileum, the cæcum, ascending and transverse colon, lay within the descending colon, sigmoid flexure, and rectum. Mr. YOUNG, Reading Path. Soc. *British Med. Journal*, Sept. 24, 1859.

CASE 31. 11½ months old; previous history not given. Symptoms, screaming, restlessness; scanty evacuations of blood and mucus; vomiting, tenesmus; at first no abdominal tenderness, then slight tenderness and distension; urine freely passed; rapid emaciation and collapse; death on the third day. Sec. Cadav. A slight exudation of serum, and blood in abdomen; about four inches of the ileum, the cæcum, the ascending and transverse colon, were invaginated in the descending colon, to near the sigmoid flexure; the included intestine was of a dark colour, and covered by mucus, but not inflamed. Mr. CLARKE, Westminster Med. Soc. *Lancet*, Feb. 17, 1838.

CASE 32. 6 months old; previous condition not given. Symptoms, obstinate constipation, vomiting, evacuations of blood and mucus; died the third day. Sec. Cadav. The cæcum, ascending and transverse portions of the colon, were invaginated in the descending portion, and their mucous membrane of a purple colour from strangulation. E. SMITH, London Path. Society, Dec. 4, 1848.

CASE 33. 4 months old; previously well. Symptoms, vomiting; scanty stools of pure blood; paroxysms of pain; pupils dilated; pulse 200 per minute; abdomen soft; skin hot and pallid; injections returned as fast as given; died, in convulsions, nineteen hours after the commencement of the disease. Sec. Cadav. Four simple intussusceptions in the small intestines easily reduced; lower portion of the ileum of a deep-red colour, and intussuscepted within the ascending colon, which latter was also swallowed within the transverse arch; appendix vermiformis highly injected; mucous membrane of the inflected ascending colon beautifully injected; that of the invaginated ileum intensely red; stomach and intestines above the intussusception healthy; the colon below, as well as that containing the invaginated fold, was of a dark-blue colour. Mr. GORHAM, *Guy's Hospital Reports*, Oct. 1838.

CASE 34. Male, aged 3 months and 4 days; previously well. Symptoms, constipation, scanty stools of mucus and blood; vomiting; pulse accelerated, and respiration slightly so; distension in the right iliac region; a portion of the ileum protruded from the anus twelve hours before death; died on the eighth day. Sec. Cadav. Twelve inches of the ileum doubled on itself, had descended the whole length of the colon, drawing the caput coli within the ascending colon; the appendix vermiformis protruded from

the end of the mass; colon contracted within the space of six inches. J. LEWIS SMITH, M. D., N. Y. Path. Soc., June, 1861.

CASE 35. Male, 3 years 4 months old; body much contused, two years previously, by an accident in the street; from this period, frequently complained of pain in the abdomen, in the vicinity of the injury; about the first of November, 1847, the pain became more severe, and he occasionally vomited; about the close of the year Dr. W. was consulted, but treatment gave no relief; six weeks before death the bowels became loose; dejections contained blood and mucus; tenesmus; two lumbrici passed; some severe pain; the bowel was frequently protruding, but replaced by the mother; great emaciation; death occurred July 10th, 1848. Sec. Cadav. Greater omentum showing traces of inflammation; stomach and upper part of small intestines healthy; intestines empty; no lumbrici found; the cæcum was inverted, and had descended through the colon, to the lower portion of the rectum, carrying with it the ileum and the entire colon, except the last ten or twelve inches; there were two feet of inverted intestine; the mass was inflamed, and the cæcum and colon, in particular, approached the gangrenous state. WILMER WORTHINGTON, M. D., *Amer. Journal Med. Sciences*, Jan. 1849, p. 97.

CASE 36. 10 months old; previously well, but liable to constipation. Symptoms, screamed violently from pain; fainted; two evacuations fecal, with mucus and blood, then a large dejection of blood and mucus; tenesmus constant; surface pallid, and of a blue tinge; lived forty-eight hours; parents state that they lost another child, of the same disease, at the same age. Sec. Cadav. "A double intussusception of the large intestine was found; the cæcum, with the inferior portion of the ascending colon, had been drawn into the upper part of the ascending colon, and this last, with its contents, had been drawn into the transverse colon, which was *in situ;* the invaginated portions were not confined by lymph. There was a sparing deposit of lymph on the peritoneal surface of the ascending colon." Dr. BLAKE, Birmingham Path. Society. *Prov. Med. and Surg. Journal*, May 3, 1848.

CASE 37. Female, 11 years old; previous condition not given. Symptoms, thirst, quick pulse; a sense of oppression and pain in the bowels; vomiting, finally stercoraceous; constipation; the countenance became ghastly, and death appeared imminent. On the evening of the sixth day, the cæcum, with a portion of the colon with the meso-colon attached, measuring thirteen and three-fourth inches, was passed from the bowels, with six quarts of black and fetid feculent matter, when she immediately began to improve, and her health was finally entirely restored. J. W. BOWMAN, *Edinburgh Med. and Surg. Journal*, Oct. 1813.

CASE 38. Male, 6 years old; health previously good, except that on the day preceding the attack, the calves of the legs were swollen, mottled, and tender. Symptoms, vomiting till the fifth or sixth day, constipation, tenderness and pain in the right iliac region; on the sixth day had severe general convulsions, which recurred at intervals for twenty-four hours, when they subsided, and he became conscious; the pain continued in the right iliac region, and he passed a little blood; on the eleventh day, he voided, in his sleep, the cæcum, vermiform process, and a part of the colon, and from this time the abdominal disease subsided; two days subsequently, his left leg became cold and pulseless, and finally, all that portion below the patella became gangrenous. He eventually recovered, with the loss of the leg. CHARLES KING, *Lancet*, 1854.

CASE 39. Male, 4 months old; previously in excellent health. Symptoms, vomiting; uttered at intervals sharp cries; had one or two fecal dejections, and then stools of blood; eyes injected; surface hot; pulse at first 140, and finally frequent and feeble; a canula introduced into the rectum met an obstruction five or six inches above the anus, and a hard elongated tumour was felt in the left iliac fossa; died exhausted on the third day. Sec. Cadav. No marked emaciation; serum in the abdominal cavity not abundant; the cæcum and appendix vermiformis had traversed the transverse arc of the colon, and descended nearly to the rectum; the invaginated portion of intestine resembled a large sanguineous clot, it was so impregnated with blood; it had at first a very dark-red colour. Dr. PENQUIER, of Brest, *L'Union Médicale*, Paris, Aug. 22, 1861.

CASE 40. Male, 5 years old; was ill four months with symptoms, at first those of fever; complained of pain in the region of the bladder, but had no abdominal tenderness; pain somewhat relieved by pressure; bowels rather constipated but no dejection of blood; urine sometimes scanty, sometimes copious; pulse frequent. Finally he passed by stool eight inches of the ileum, the cæcum and appendix vermiformis, and four inches of the colon, dark and offensive; the evacuation of this was preceded and followed by diarrhœa. From this time his health was fully restored. Dr. QUAIN, Lond. Path. Soc., Aug. 16, 1859.

CASE 41. Previously well. Symptoms, constipation, paroxysms of pain; no abdominal tenderness; occasional tenesmus; a cylindrical tumour in the left iliac region. Died the beginning of the third day. Sec. Cadav. The upper part of the descending colon had descended into the inferior portion to the extent of two inches. Dr. MONTGOMERY, Dub. Path. Soc. *Lond. Med. Times*, Dec. 23, 1848.

CASE 42. Male, 6 months old; had slight diarrhœa for two or three days previously. Symptoms, tenesmus, bloody stools. Autopsy. Intussusception in the transverse colon to the extent of two or three inches; a considerable part of which was gangrenous. E. Y. STEELE, *Lancet*, June 23, 1849.

CASE 43. Female, 4 months old; had nausea and vomiting for three weeks previously. Symptoms, restlessness, tenesmus, paroxysms of intense pain, vomiting, muco-sanguineous stools. Died after six days. Sec. Cadav. Small intestines inflamed in places; the lower portion of the colon, and the upper portion of the rectum, had descended into the lower portion of the gut; the inverted extremity of the intestine was of a dark-grumous colour, being covered with blood and mucus. Mr. HOWSHIP, *Edinb. Med. Journ.*, April, 1812.

4. *Uncertain.*

CASE 44. Female, 4 months old; had disordered bowels from birth. Symptoms, vomiting, paroxysms of pain, constipation, a tumour in the left iliac region; abdominal tenderness towards the close. Died exhausted on the sixth day. Sec. Cadav. An intussusception was found in the left iliac region. H. F. CARTER, *Lancet*, June 2, 1849.

CASE 45. Male, 6 years old; previous condition not stated. Symptoms, pain in the bowels, fever, stercoraceous vomiting; tongue covered with a dark fur; prostration; constipation at first, but in four or five days he had a dark-coloured evacuation followed by alleviation of the symptoms, and soon after complete relief; the bowels acted regularly, the fever abated, and the appetite returned; on the third day subsequently a portion of the bowel protruded from the anus, and on the fourth day this was discharged,

measuring twenty-three inches in length. After this he continued several weeks emaciated, his digestion imperfect, and stools, which were obtained with difficulty, resembling "the fermenting wash in a distillery." The abdominal pain, which at first was pretty constant, finally became paroxysmal, like the pains of labour; but this at length subsided, and his health was subsequently tolerably good, except that he was subject to colic and irregularity of the bowels. LEVI GAYLORD, *Amer. Journ. of Med. Sciences*, Oct. 1827.

CASE 46. Male, 12 years old; previous condition not given. Symptoms, tongue furred; vomiting; abdominal pain; pulse corded and frequent. On the fourth day a free feculent evacuation took place, mixed with blood, and the symptoms immediately improved. On the eighth day, fifteen to eighteen inches of the ileum were passed in a stool, after which he rapidly recovered, except that the bowels continued rather relaxed; and for three or four weeks he could not stand erect without pain. Twelve weeks after his recovery he was seized with typhous fever, of which he died in two weeks. Sec. Cadav. The traces of the diseased bowels were visible, by a considerable puckering and contraction, where the slough had taken place and the parts united, yet there appeared to be sufficient room for the feces to pass; and, but for the febrile attack, he might have enjoyed ordinary health. F. BUSH, *Lond. Med. and Phys. Journ.*, Dec. 1823.

CASE 47. Female, 12 years old. When two years old had symptoms of marasmus, and was delicate for three or four years. Since this has had occasionally purging and severe pain in the bowels. Symptoms, severe vomiting; pain in the right side a little below the ribs; and a tumour the size of a goose's egg at the point tender to the touch. On the twelfth day of the physician's attendance, a portion of the ileum, twelve inches long, was passed; the stercoraceous vomiting and the pain and distension of the abdomen continued about nine days longer, after which she gradually improved, and a month later was reported to be in better health than before the attack. JOHN LANG, *Lancet*, Oct. 1855.

CASE 48. Symptoms, vomiting, pain in abdomen; muco-sanguineous evacuations; tenesmus; fever; a tumour detected by examination per rectum, two or three inches from the anus. Sec. Cadav. An invagination of intestine was found in the rectum. Dr. JACOBI, New York Path. Soc., Aug. 8, 1861.

CASE 49. Female, 9 years old; previously had dysentery. Symptoms, vomiting and great prostration at first; on the fifth day a large quantity of bloody serum was passed by the stools, but no feces; on the seventh day, and occasionally to the twelfth, there were small feculent discharges; great distension of abdomen; enlargement of the cutaneous veins, as if the vena cava were obliterated by pressure; on the twelfth day a portion of intestine still invaginated, measuring ten inches, was evacuated from the bowels. Dr. PATTERSON, Medico-Chirurg. Soc. Edinb. *Month. Journ. Med. Sci.*, March, 1854.

CASE 50. Male, 8 months old; previously well; had tenesmus and stools of blood; no vomiting and no tenderness; died exhausted on the second day; intestine protruded. E. Y. STEELE, *Lancet*, June 23, 1849.

Seat.—The small intestines are very liable to intussusception in the child, on account of their great mobility. Any irritant, mechanical or other, which disturbs the regular peristaltic movements, may produce it. Hence,

those accustomed to make *post-mortem* examinations of children, have noticed the invaginated knots along the jejunum and ileum in a variety of affections. Hevin, referring evidently to this simple invagination, states that he has seen it, at the Salpétrière, over three hundred times. Billard has seen it, especially in children who have been subject to constipation. It has been noticed after death from acute hydrocephalus, and from spasmodic diseases. I have not infrequently seen it, at the Child's Hospital, in infants who have died of the summer complaint. Sometimes, this invagination is thought to occur at the moment of dissolution. However produced, whether through irritating ingesta, or worms, or in *articulo mortis*, intussusception in the small intestines is very rarely so serious in the child as to constitute disease. Slight traction of the bowel reduces it, and it probably causes very little suffering. Rilliet, not considering this simple invagination a matter of any moment, states that intussusception never occurs in the small intestines of the infant. Invagination of the ileum in the colon, we shall see, is a frequent and very fatal form of intussusception in infancy; but, as regards the complaint seated in the small intestines—in other words, invagination of one portion of the small intestines into another—I have found no exception to Rilliet's remark. Cases have, indeed, been cited to prove its falsity; one, reported by M. Marage, in which the child survived after having voided thirteen inches of small intestine; but, from all that appears, this may have been that common form of invagination—the ileum into the colon. Another case has been cited by Bouchut, from Taylor, of a child twenty months old. I am not certain what case this is, but if it be No. 16 of our collection, as is probable, we see the invagination was really in the colon, although a small portion of the ileum had not been inverted, so that it formed about an inch of the exterior of the volvulus. If there are exceptions to Rilliet's statement, they are certainly very rare.

In children above the age of two years, fatal invagination in the small intestines may occur, though not frequently. Cases 1 and 2 prove this. There is no symptom which will enable us to distinguish, with certainty, intussusception in the small intestines from that in the colon. The main difference appears to be, severer pain and more constitutional disturbance, less tenesmus, and less abdominal distension. Case 1 teaches us how difficult it is, sometimes, to determine the exact seat of intussusception before death. An obstruction was discovered four inches above the anus, and yet the intussusception was in the upper part of the jejunum, the mass having been pressed down into the pelvis.

While we have found records of only two cases of intussusception in the small intestines, sufficient to constitute disease, in children under the age of twelve years, we have collected records of forty-one cases of this lesion in the colon, which resulted either in death, or in the destruction and loss of a portion of the intestine. Besides these, we have records of seven cases in which the location of the disease in the intestine was not precisely stated.

Age.—Of the fifty cases constituting the whole collection, the ages were as follows:—

3 were 3 months old	1 was 10 months old
11 " 4 "	1 " 11 "
2 " 5 "	1 " 12 "
5 " 6 "	2 were from 1 to 2 years old
1 was 7 "	8 " 2 " 5 "
1 " 8 "	8 " 5 "15 "
3 were 9 "	3 not given

From these statistics, it appears that this complaint is rare under the age of three months, and that the period of greatest frequency is from the third to the sixth month, the maximum number being at the fourth month. There were twenty-one cases between the ages of three and six months inclusive, eight from six months to one year, and only eighteen between the ages of one year and twelve. *A posteriori* reasoning at once leads to the conclusion that there must be, in children under the age of one year, some anatomical peculiarity at the commencement of the large intestine which favors intussusception. Dr. Penquier, of Brest, who reported Case 39, attributes the frequency of intussusception during the first year of life to the relaxed state (*laxité*) of the colon, and the small calibre of the large intestine, conjoined with the violence and persistence of the infant's cries. Whatever the explanation, the fact is certain that intussusception is most frequent and fatal in the period mentioned. It is the province of the anatomist, rather than the practising physician, to discover the cause.

Sex.—In thirty-two cases in which the sex is given, twenty-two were males.

Previous condition.—In thirty-two cases, the condition of the patients previously to the invagination is given. Sixteen of these were, to all appearance, in perfect health, and of this number all but two were under the age of one year. Five under the age of one year had disordered bowels previously, either diarrhœa, constipation, diarrhœa alternating with constipation, or dysentery. Another child, four months old, was in infirm health till the age of ten weeks, having at one time symptoms of invagination; but, after the age of ten weeks, its health was good. Still another, also four months old, had nausea and vomiting three weeks before the invagination commenced. Of those above the age of one year, the previous condition is given in nine cases. Four of these are stated to have had dysentery or diarrhœa; one had pain in the abdomen for two or three weeks, one for two years from an injury; and one had ascarides, of which she complained the day before the attack, and a cough; while, as stated above, only two had previous good health. That ascarides may be an exciting cause of invagination, is evident from the experiments of Haller, who produced intussusception in the rabbit by pinching the rectum. It is an interesting fact, however, that in only three cases of the whole number were worms present;

in two, lumbrici. This shows that irritation from worms is rarely the exciting cause of intussusception. The above statistics, then, prove that, in infants under the age of one year, invagination usually occurs in a state of perfect health, although the exceptions are not infrequent; while, above that age, there is usually disorder or disease of the bowels.

Pathological anatomy.—The lower portion of the ileum, or the cæcum, is the part primarily invaginated in most cases of fatal or serious intussusception in the child. By referring to Cases 3 to 9, it will be seen that intussusception not infrequently begins in the prolapse of the ileum through the ileo-cæcal valve, in the same way that prolapse of the rectum occurs through the sphincter ani. If death take place early, as in Case 4, only a small portion of the ileum may have passed the valve. If the case is protracted the tenesmus brings down more and more of the ileum, with its accompanying mesentery. The constriction of the valve, which acts as a ligature, soon prevents the further descent of the ileum, and, the tenesmus continuing, the next step in the morbid process is the inversion of the caput coli, which is drawn into the colon by the descending mass; and, unless the case terminate by sloughing or death, the ascending and transverse portions of the colon are successively invaginated. The records show that intussusception occurs as above stated in a large proportion of cases. In one case, No. 16, the intussusception began a few inches above the valve, so that the ileum constituted a small portion of the exterior of the mass. Not infrequently, the cæcum is the part primarily inverted and invaginated, and, descending along the colon, it draws after it the ileum, which sustains its natural relation to the ileo-cæcal valve. When this occurs, the cæcum is found at the lower end of the mass, and two orifices are observed, one leading through the valve and the other into the appendix vermiformis. In Cases 12, 15, 18, 19, 24, and 35, the intussusception evidently commenced with the caput coli. These two forms of invagination—that in which the ileum, passing through the ileo-cæcal valve, successively inverts and draws after it the caput coli and the divisions of the colon; and that in which the caput coli is primarily invaginated, and, descending along the large intestine, inverts the latter and draws after it the ileum—constitute the vast majority of cases of this disease in childhood. In Cases 3 to 40, the parts invaginated were the ileum or caput coli, or both, generally with a portion of the colon. In one case, 42, the intussusception was in the transverse colon; in one, 41, in the descending portion; and in one, 43, in the lower portion of the descending colon and in the rectum. In a few instances (22, 33, and 36) double invagination occurs. The first invagination becomes arrested in its progress, and, by the strong expulsive efforts of the child, the whole mass descends into the portion of intestine below, forming a volvulus of great thickness and necessarily fatal. In rare instances, there is so little constriction of the invaginated intestine that it remains partially pervious. In these cases, life may be protracted for weeks or even months, the evacua-

tions being sufficient for the wants of the system. Death occurs, finally, in a state of exhaustion; Case 7 affords a notable illustration of this. This child, four months old, lived six weeks after the symptoms of invagination commenced, and seventeen days "with a portion of the bowel protruding from the anus." It was found at the post-mortem examination, that part of the ileum had descended through the entire colon and had remained pervious. Case 35 affords another illustration of the same. It is not known at what time the invagination began in this case, though there were symptoms of it for seven months before death. During the last six weeks of his life, the invaginated intestine protruded frequently from the anus, and was replaced by the mother. In this case, "the cæcum was inverted, and had descended through the colon to the lower portion of the rectum, carrying with it the ileum and the entire colon, except the last ten or twelve inches." In Case 19, the symptoms indicated a continuance of the disease for three, if not eight, months. As the intestine becomes invaginated, its mesentery or meso-colon is also invaginated, and, with rare exceptions, its veins compressed. The pathological state of the incarcerated mass soon becomes that of intense congestion. In infants, usually in a few hours, so great is the distension of the capillaries that they give way; blood escapes into the intestine, which coagulates around the volvulus and passes from the bowels in scanty motions. On examining the invaginated intestine after death, if gangrene has not occurred, it is found of a uniform intense red colour, sometimes resembling a long and firm clot of blood. In those who die early, there are no traces of inflammation; but in more protracted cases, the attrition between the serous surfaces excites local peritonitis. In none of the fifty cases in which post-mortem examinations were made did the inflammation extend beyond the invagination. Usually, the intestine forming the exterior of the invaginated mass is much drawn together or puckered. In the case treated by myself, 34, the entire colon, which formed the exterior, was compressed within a space of six inches or less, since about twelve inches of the ileum, doubled on itself, passed through the entire colon so as to protrude from the anus, the only part of the large intestine inverted being the caput coli. In Case 16, six or seven inches of the ileum were compressed within the space of one inch.

The abdomen, at first of natural fulness, and soft, usually becomes more and more distended till the close of life; but in cases of much vomiting, the distension is moderate. This fulness is due to gas and fecal accumulation, above the invagination. The portion of intestine below it is generally empty, unless it contain a little blood, and is sometimes contracted.

There are few morbid changes in intussusception besides those pertaining to the intestine. Professor Simpson saw Case 49, and remarked before the medical society at which the specimen was exhibited, that it appeared to him from the distended state of the cutaneous veins, that the vena cava was compressed. In Case 38, there was probably compression of the left

iliac artery; for, two days after the expulsion of the cæcum and a part of the colon, pulsation ceased in the left leg, and all that part below the patella became gangrenous, and sloughed off; after which the patient recovered. It is probable that in these cases the bloodvessels were more or less compressed by the cicatrization and contraction which followed the sloughing of the intestine, such as occurred in Case 46. This child, on the eighth day of his sickness, lost by the stool fifteen to eighteen inches of the ileum, after which, he rapidly recovered. Twelve weeks later, he was seized with typhus fever, which proved fatal in two weeks. The records state: "The traces of the diseased bowels were visible by a considerable puckering and contraction where the slough had taken place, and the parts united." It is a reasonable supposition that "puckering and contraction," operating over the bloodvessels, produced the phenomena of impaired circulation, observed in Cases 38 and 49. In Case 38, although the cæcum and a part of the colon contiguous were discharged, the invagination was probably in the descending colon, if not lower still, so as to correspond with the artery, the common or perhaps internal iliac. Whether or not this is the true explanation, the fact remains, that in some cases of sloughing of invaginated intestine, the circulation in the large venous or arterial trunks of the abdomen is obstructed.

Symptoms.—Pain in the abdomen, usually paroxysmal, is generally the first and one of the most conspicuous symptoms. It is often severe, resembling the pain of hernia, and abating only with the failing strength of the child. After the few first days, there is apt to be more or less continuous pain, arising from the presence of inflammation. In the beginning, firm pressure on the abdomen causes no distress, but after a period, there is tenderness frequently in a marked degree no doubt corresponding with the inflammatory stage. It is confined to the part of the abdomen, corresponding with the invagination. At this point the abdomen is more full than elsewhere, and not unfrequently the physician can feel the invaginated mass, and detect its exact location. Sometimes, at an early as well as later period, cerebral symptoms occur, as in Case 4, which terminated in death by convulsions on the second day. Convulsions are, however, comparatively rare, and the mind is generally clear till the last moment. In infants, the countenance in the intervals of pain is often placid, and not indicative of any serious disease in the first stages of the complaint. In older children, there appears to be an earlier and more continuous sensation of distress or oppression in the bowels. At a more advanced period, in both, the countenance becomes anxious and haggard, the eyes hollow or sunken, the body loses its plumpness, and, if the case is protracted, becomes emaciated.

Vomiting is rarely absent; in thirty-nine out of forty-seven cases, it is stated to have been present; in seven cases, there is no record of this symptom, while it is recorded absent in only one case. This is Case 50, the record of which is very meagre, and death occurred the second day. The vomiting

becomes stercoraceous in a few days, and ceases usually some time before the close of life, from the failing strength, or the occurrence of gangrene. It has the effect of relieving distension.

The appetite is usually impaired, if not absent; infants sometimes nurse for several days, probably, as much from thirst as hunger.

There is often one natural evacuation from the bowels after the intussusception commences, and then succeeds obstinate constipation. This evacuation is of the feculent matter below the invagination. In children, under the age of one year, scanty motions of blood, often mixed with mucus, begin to occur in a few hours. In twenty-six children, under this age, I find that twenty-three had such evacuations, occurring usually several times in the course of the day; in two of these twenty-six there is no record of this symptom, but in the remaining case, it is stated to have been absent. Scanty evacuations of blood, unmixed with feculent matter, have been considered pathognomonic of intussusception in the infant, and we see the ground for such belief; but in rare cases the volvulus may be partly pervious, and, although the dejections may contain blood, they are also feculent. There is one such case in our collection (7), already referred to, under the head of Pathological Anatomy. In this case there was the rare anomaly of so large an opening through the ileo-cæcal valve, as to allow not only prolapse and descent of the ileum through the entire colon, so as to protrude six inches from the anus, but also fecal passages through it daily.

In children, above the age of one year, the intestinal capillaries are not so frequently ruptured as under that age, and sanguineous evacuations are therefore less common. We have records of eighteen cases of invagination between the ages of one year and twelve, in only six of which is it stated that there were bloody motions. And in these six the blood was not passed frequently, or daily, as in infants, nor so pure, unless in Cases 7 and 9, the records of which are not explicit on this point. Two of these patients passed moderate bloody evacuations, after protracted periods of constipation. One had feculent discharges through the entire sickness, and in the remaining case, blood was passed at first, but, finally, the discharge was only feculent.

The condition of the bowels in the eighteen cases was, for the most part, that of obstinate constipation, no dejections, whether bloody or fecal, occurring for days; but there were a few striking exceptions. In Cases 5, 19, and 35, the bowels were relaxed. The ileum in these cases had descended through the entire colon, or the larger part of the colon, and, being pervious, the feces escaped from the anus without detention in the large intestine, or with detention only in its lower portion, and were therefore liquid.

Tenesmus is another symptom which adds much to the suffering of the child. It is not always present, but, in a large proportion of cases, even where the invagination is in the upper part of the large intestine, there are

frequent and distressing attempts to pass the incarcerated mass. The tenesmus does not commence as early as some of the symptoms, and it ceases when the strength is much reduced.

The surface is usually cool in the first stages of the complaint, but finally, as febrile reaction comes on, symptomatic of the inflammation, the temperature rises, and continues above the healthy standard, till the intestine sloughs, or till the stage of collapse occurs, which ushers in death. The pulse, especially in the infant, is sometimes tranquil at first, but, whatever the age, it generally soon becomes accelerated from the paroxysms of pain, and, subsequently, from the serous inflammation in the invagination. There is no disturbance of the respiration, except that it is somewhat hurried from the fever, and from the pain felt in advanced cases, on taking a full inspiration.

It will be seen the symptoms varied somewhat under the age of one year from those above that age; but the most striking differences in the cases depended on the amount of intestinal constriction.

Diagnosis. In the infant, the diagnosis of intussusception is not in general difficult. The presence of obstinate constipation, vomiting, tenesmus, paroxysmal pain, and scanty passages of pure blood, or blood mixed only with mucus, indicate this complaint, and in the cases whose histories I have collected, an accurate diagnosis was generally early made. In one or two instances, the disease was supposed at first to be dysentery, and treated as such, although purgatives produced no fecal passages. It should be borne in mind that, in rare instances in intussusception in the infant, the bowels may be relaxed, and some other symptoms besides constipation may be absent, especially tenesmus, thus rendering diagnosis difficult.

In children above the age of one, or at least two years, the symptoms are not so decided, and the diagnosis should be more cautiously made. Obstinate constipation in most cases, in spite of purgatives and clysters, is, perhaps the most important diagnostic symptom. It is well to recollect, as aiding in the diagnosis, that in children of all ages, suffering from intussusception, clysters are usually given with difficulty, and are quickly and forcibly returned, on account of the resistance of the invaginated mass. And often by examination of the abdomen, the location and even the shape of the volvulus can be detected.

Duration. In the following table, the duration of the intussusception, in forty-eight cases, is given, as nearly as it can be ascertained from the records.

2	died the 1st	day	1 lived over a week
6	" 2d	"	1 died the 8th day
14	" 3d	"	1 " 10th "
2	" 4th	"	1 lived nearly a month
5	" 5th	"	1 lived (case 7) 6 weeks
2	" 6th	"	3 time of death not given
2	" 7th	"	7 recovered

In the two remaining cases, 19 and 35, the exact duration is not certain; but it was far beyond the usual period. The first of these, a girl of six years, having eaten raw carrots, was seized with pain in the abdomen, which continued eight months, when she died. During the last three months she passed mucus and blood. In this case the cæcum had descended to the anus, drawing with it the ileum which remained pervious. The symptoms indicated the continuance of the invagination for three months, if not eight. In the other case, the child complained of pain in the abdomen for many months, and occasionally vomited. During the last six weeks of his life, all the phenomena of invagination were present. The pathological condition of the intestine found after death was essentially the same in both cases.

In West's excellent treatise on diseases of children (second edition, 1854, page 380), it is stated, that death in this complaint always occurs within a week. These statistics prove that this remark should be qualified, although a large majority do die within the first seven days. In thirty-three cases death was within the first week. In all fatal cases in which strangulation was complete, death took place within eight days, the day of greatest mortality being the third. In these cases the average duration was 3.7 days. Death on the first day is rare, but it occurred in two instances. When it is so early it is often, if not generally, through cerebral congestion.

Prognosis. Intussusception is, in its nature, so grave an accident, that the physician called to a case should always expect and predict a fatal result. A favourable issue is only through an unusual combination of circumstances. But while death is the common result, there are three different modes of termination, in which life is preserved. First, the reduction of the incarcerated intestine, with immediate relief. There can be no doubt that it is possible for intussusception in the colon, when recent, to be reduced by the unaided action of the bowels, in the same way as the common, simple intussusception in the jejunum and ileum, or as hernia is reduced through the vermicular action of the intestines. For sometimes, as in Case 4, there have been previously the same symptoms as those which accompanied the fatal attack, and which subsiding, the patient remained for a time in perfect health. This termination is probably rare, if the symptoms are sufficiently marked to necessitate treatment. Another mode of favourable termination has been mentioned by some European observers, namely, a gradual return to health, the intestine remaining invaginated, but being pervious. At the meeting of "the Westminster Medical Society," at which Case 30 was the subject of discussion, Dr. Johnson alluded to this mode of termination, stating that the inverted intestine became agglutinated. Bouchut evidently refers to the same in the following passage: "Among other children the disease lasts a much longer time, but the vomitings gradually cease, the intestinal hemorrhage disappears, the strength returns, and the health becomes restored without the expulsion of fragments of the intestine.

M. Rilliet, who points out this possibility of the cure of intestinal intussusception, observes, that it always takes place in this manner. It is true, that it is often thus," etc. We do not believe that favourable cases of intussusception terminate in this manner as often as these writers would lead us to suppose; certainly in no instance in our collection was there such a gradual subsidence of the complaint as described by them. So far as we have been able to ascertain from the histories of intussusception, in the vast majority of protracted cases there is either death or the third mode of favourable termination, namely, sloughing. In all the cases which recovered in the foregoing collection, a portion of intestine sloughed and was expelled from the anus.

Infants with intussusception, other than the simple form, which we described at the beginning of this paper, almost invariably die. The reason of this is obvious, when we consider that at this age, in a few hours after the invagination begins, the imprisoned mass becomes so congested that its capillaries give way, and its reduction is impossible by any appliance of medical art. We cannot, with any reason, expect recovery except through sloughing, and the expulsion of the displaced intestine; and few infants have the requisite strength for so tedious and exhaustive a process. The youngest child that recovered in this way, of which I have obtained the history, was one reported by M. Marage, an infant thirteen months old. With the exception of this case, the youngest, so far as I have been able to find, was (40) a boy 5 years of age. The older the child the greater of course the endurance, and the better the hope of recovery. In our collection are the records of seven cases which resulted favourably by sloughing. These children were of the ages of 5, 6, 6, 9, 11, 12, and 12 years. The separation of the invaginated mass occurred in six of these between the sixth and twelfth days, with an average of nine and a half, the time not being given in one case. If, then, the patient can be carried through the first week without too much exhaustion, we may each day look for the discharge of the slough, the reopening of the bowels, and ultimate recovery.

In those rare cases in which there are daily feculent dejections, recovery is still improbable. At an early period reduction is, no doubt, more easy than when there is strangulation, but from the easy movement of the one portion of intestine on the other, the invagination, ordinarily, soon becomes so extensive as to be necessarily fatal.

Mode of Death.—In a large majority of cases, death is through asthenia. There may be convulsive movements more or less marked, but the prevailing characteristic as death approaches is, usually extreme exhaustion. In exceptional cases, as already intimated, the life of the sufferer is cut short by convulsions before the stage of exhaustion is reached, as in Cases 2 and 4. In all the fatal cases of intussusception collated by us, death occurred in one of these two ways.

Treatment.—It is unfortunate in cases of intussusception that the time

in which treatment can be of most service is apt to pass by before the true condition of the intestine is detected. Invagination being comparatively rare, the patient is generally on the first day treated for colic or dysentery, or some other common affection of the bowels; and it is often not till the second day, when the intestine has become incarcerated, that the physician accurately diagnosticates the disease. The purgative medicines usually given in the commencement are quite as likely to injure as to benefit. In fact both reason and experience teach us the impropriety of such treatment in this complaint. Cathartic remedies act as a *vis a tergo*, and are likely, at least in some instances, to cause a still further descent of the inverted intestine. The purgative, which above all others has been most recommended, is the crude quicksilver, but the voice of the profession appear to be decidedly against its administration in any stage of intussusception. This agent was administered in two doses, of an ounce each, to one of the patients in the foregoing collection, and four or five days before death, but no portion of it ever passed from the bowels. At the *post-mortem* examination, a considerable part of it was found in small globules along the small intestines, each coated with a black substance, either the black oxide of mercury, or the sulphuret. Being converted into a substance easily absorbed, its effect on the system must be very injurious, if retained, as it usually will be.

A proper understanding of the true pathological condition of the intestines suggests a very different mode of treatment, namely, either by injections, or by sustaining the strength of the patient, and giving palliative remedies, in the hope that recovery may take place through the process of sloughing and adhesive inflammation. If we may judge from the remarks of physicians who have reported cases, and by discussions at societies in which specimens have been presented, this simple treatment is the one commonly adopted by the intelligent portion of the profession.

The injections which have been used successfully in apparent cases of intussusception have been chiefly those of air or water. The medical journals contain reports of cures by both these agents. The following communication to the London *Lancet*, for March 17, 1838, explains the method of employing air:—

"Sir: The subject of intussusception having lately been discussed at the two principal medical societies in London, and nothing new having been elicited on these discussions, I take the liberty of suggesting to the profession, through the medium of your valuable periodical, the trial of inflating the bowels by means of a glyster-pipe attached to a common pair of bellows; it has fallen to my lot to witness several of these most distressing cases in children; the nature of the obstruction was foretold during life, and unfortunately verified by *post-mortem* examination. The last case of the kind, which came under my care about two years since, presented all the usual symptoms: intolerable restlessness, the most obstinate sickness, the singularly distressed state of countenance, and shrunken features. The usual remedies were had recourse to, viz., warm baths, glysters, anodyne frictions over the abdomen, &c., but without avail. As a forlorn hope, I made trial of inflation by the above means, with the most happy

result. The sickness immediately ceased; the child within an hour passed a natural stool; fell into a sleep, and in the morning was almost without ailment.

I am, sir, your constant reader, and obedient servant,

SAMUEL MITCHELL, Surgeon.

KINGSTON-ON-THAMES, Feb. 26, 1838."

This mode of treatment is termed novel in the *Lancet*, but it is as old as the time of the "father of medicine," who says: "*Et ulterius addit sin minus, hæc opem ferant folle febrili, in ventrem indito flatus immitatur.*" (Hippocrates' Works, translated from the Greek, by Grimm, 4 Bd. page 168.) Haller also recommended the same treatment: "*Flatus etiam immissus celerime susceptionem dispellet.*" (Physiologia Corporis Humani, tom. vii. page 95.)

When air is employed to remove the intussusception, it is necessary to produce distension of the intestines to the fullest extent, below the seat of the complaint. The profession generally, so far as I can ascertain, depend in the treatment of this affection more on clysters of simple water, than on any other means, and the journals contain reports of cases, having the symptoms of intussusception, which were relieved by this treatment. Water, like air, must be injected in considerable quantities, and it is only in the commencement, that we can expect any good from the use of either air or water; for in a little time the inverted intestine has not only become so firmly fixed, but ordinarily has descended so far, that the injection is immediately and forcibly returned in spite of all our efforts to retain it. There is a class of physicians who, when foiled in their attempts to arrest a disease, are apt to adopt heroic measures, the "kill or cure" treatment. They rely too much on medical art, and too little on nature. So in cases of intussusception, when injections and other rational measures have failed, there are those who recommend cutting down upon and returning the intestine, in the same way as the surgeon treats strangulated hernia; and this operation is said to have been successfully performed in the adult. If the tumour can be readily detected by external examination; if its position be favourable, and the patient an adult and robust, the propriety of the operation, in rare instances, might be seriously considered; but there must be very few surgeons who would undertake or recommend it in the child, under any circumstances. As an objection to the use of the knife, is the important fact, which contra-distinguishes intussusception from hernia, that sloughing which finally occurs, if life is prolonged, is conservative in the former, though fatal in the latter. After failing by repeated injections to return the intestine, active measures should be discarded, and the expectant plan adopted. Recollecting that death is from asthenia, and that after a certain time, if the strength holds out, the mass which closes the intestine is expelled, we should endeavour to sustain the vital powers by nourishment, and finally stimulants, and relieve the sufferer by the judicious use of opiates. At this stage of the complaint, there is usually local peritonitis between

the coats of the volvulus, and this also requires the use of some form of opium. Sustaining and expectant measures ought to be adopted early, for if our efforts to replace the bowel do not succeed the first or second day, there is no prospect of their being successful subsequently.

Vomiting, which is so constant, requires no treatment. It is salutary. It relieves the distension, and prevents fecal accumulation, which, pressing downwards, increases the extent of the invagination, and counteracts the effect of the injections. Convulsions are to be treated by the local measures usually employed when they occur under other circumstances. At first no external treatment is required over the seat of the invagination, but when the abdomen becomes tender and painful from the local peritonitis poultices are of service.

Aphorisms.—1. Simple intussusception is common in the jejunum and ileum of infants, but intussusception sufficiently grave to constitute disease, or to be attended by symptoms, very rarely, perhaps never, occurs at this age in the small intestines (the small intestines constituting the exterior, as well as the interior of the mass). In children above the age of one or two years intussusception of a grave and fatal nature does occur, though rarely in the small intestines.

2. With a few exceptions, the seat of the grave form of intussusception, or the so-called inflammatory, is the first part of the large intestine.

3. There is no symptom, which will enable us to distinguish, with certainty, intussusception in the small intestine, from that in the colon. The main difference appears to be, severer pain, and more constitutional disturbance, less tenesmus, and less abdominal distension.

4. From an analysis of 47 cases of intussusception, in which the ages are given, it appears that the period of greatest frequency of this affection is between the third and sixth month, the maximum number being at the fourth month, and there are more cases under the age of one year, than between that age and the age of twelve.

5. Cases reported show an excess of male children affected over female in the proportion of two to one.

6. Under the age of one year, intussusception begins, in most cases, suddenly, in a state of perfect health. Occasionally, the attack is preceded by diarrhœa or constipation, or the two alternately, or by dysentery. Above the age of one year, there is usually, not always, previous disorder of the bowels.

7. Worms are rarely the cause of intussusception, but, in a few instances, it seems to be produced by the irritation of lumbrici or ascarides.

8. This disease, in children, with a few exceptions, commences either with the inversion and prolapse of the lower end of the ileum through the ileo-cæcal valve, or with the invagination of the caput coli in the colon. The inverted intestine, gradually descending towards the rectum, draws after it the successive divisions of the colon; the veins of the mesentery, or meso-

colon, are compressed; circulation is arrested, causing intense congestion of the capillaries, which, in the infant, commonly give way, and occasionally in older children. In rare cases, which are usually protracted to several weeks, the intestine remains pervious, and circulation is not obstructed. Occasionally, the whole invaginated mass is received into the portion of intestine below, forming a double intussusception of great thickness and necessarily fatal. In a few instances, intussusception begins in the ascending, transverse, or descending portions of the colon. There is, at first, no inflammation in the invaginated mass, but the attrition of its serous surfaces finally causes local peritonitis; general peritonitis does not occur. The containing or external portion of the invagination becomes much pressed together or puckered. Very rarely, the large bloodvessels of the abdomen are compressed by the invagination or by the cicatrization which follows the process of sloughing, producing serious results.

9. The symptoms are pain—sudden, severe, and at first paroxysmal, but finally more or less constant; vomiting; constipation, or, rarely, diarrhœa; scanty motions of blood in infants, and occasionally in older children; tenesmus; sometimes convulsions; after a few days, a quick pulse, abdominal distension and tenderness, and a haggard and anxious countenance.

10. The location and even shape of the tumour can often be determined by external examination, and a probable, but not precise, idea of its location can be formed by noticing the resistance offered to injections.

11. Cases in which the intestine is strangulated are fatal within eight days. If the intestine continue pervious, and its circulation unobstructed, the child may live for many weeks, if he do not recover. An early death is often from convulsions.

12. In infants, the proportionate number of fatal cases is larger than in older children, on account of their greater feebleness, and of the complete and almost immediate strangulation of the intestine, as shown by the bursting of its capillaries. I know of no favourable case of intussusception under the age of one year, while, between the ages of two and twelve, more than one-third of the cases reported in the medical journals recovered.

13. There are three modes of favourable termination: first, the reduction of the displaced intestine, with immediate relief; secondly, a gradual subsidence of the symptoms and return to health, the displaced intestine remaining invaginated, but being pervious, and becoming atrophied, contracted, or agglutinated, so as not to interfere with digestion or the normal action of the bowels; thirdly, sloughing and expulsion of the invaginated mass. The second method is stated on the authority of Rilliet and other European observers. All who recovered in the preceding collection of cases recovered in the third mode, the expulsion of the mass occurring between the sixth and twelfth days, with an average of nine and a half.

14. There are two modes of death: first, by convulsions; secondly, by exhaustion. The latter is the usual mode.

15. The treatment is simple. Purgatives are useless, if not injurious. As early as possible, large injections of water should be used. If these fail to reduce the intestine, air should next be thrown into the rectum by means of a bellows or other contrivance, until the abdomen is greatly distended. If the repeated use of air and water is unsuccessful, we should soon desist from active treatment, and endeavour to sustain the patient's strength till the bowels are reopened by sloughing. Opiates should be given to relieve pain and keep in check the serous inflammation, and, when the abdomen is tender, poultices may be employed; but, further than this, our reliance must be on nutritious diet and stimulation.

147 N. 49TH ST., NEW YORK.

ART. II.—*Remarks on Chorea, with Notices of some Allied Disorders.* By JAMES J. LEVICK, M. D., one of the Physicians of the Pennsylvania Hospital.

THE involuntary, grotesque, but in some instances distressing, symptoms of chorea are too well known to need description in this place. Almost all writers on this disease quote the following graphic description of Sydenham:—

"St. Vitus' dance. This is a kind of convulsion which attacks boys and girls, from the tenth year to the time of puberty. It first shows itself by limping or unsteadiness in one of the legs, which *drags*. The hand cannot be steady for a moment. It passes from one position to another by a convulsive movement, however much the patient may strive to the contrary. Before he can raise a cup to his lips he makes as many gesticulations as a mountebank, since he does not move it in a straight line, but has his hand drawn aside by spasms until by some good fortune he brings it at last to his mouth. He then gulps it off at once, so suddenly and so greedily as to look as if he were trying to amuse the lookers on."—*The Works of Thomas Sydenham, M. D., translated by R. G. Latham, M. D., etc. Syd. Soc. Ed., London*, 1850, vol. ii. p. 257.

Among the symptoms in choreic patients not generally recorded, but which I have sometimes observed, are a tendency to fall down stairs, a disposition to hide in holes and closets, from which they can with difficulty be extricated (Fleischmann), and as a premonitory symptom prolonged insomnia.

While separately the causes of chorea are numerous, they may all, I believe, be classed under one head, that of irritations affecting a highly sensitive nervous organization. These causes may be predisposing or determining, congenital or acquired, centric or eccentric. By congenital it is not meant to be asserted that the specific disease, chorea, is transmitted from parent to child, but that the peculiar nervous organization which favours its development under the usual exciting causes is so. This peculiar diathesis shows

itself in an unusual delicacy of nervous organization which is generally associated with a feeble muscular frame. I believe, although I have never seen it so recorded, that the marriage of relatives, especially of first cousins, is highly favourable to the development of this disease, and am familiar with an illustration of this in a large family the children of first cousins, almost all the members of which are more or less choreic, some of them strikingly so. In their case the irregular manifestations of nervous force in the muscular system appear to have taken the place of the impairment of cerebral function which often attends the offspring of such marriages, as the subjects of it are possessed of unusual intellectual attainments. Returning to the proposition that irritation to the nervous system is the exciting cause of chorea, we may consider the commonly received causes of this disorder.

Fright is universally admitted to be one of the most common, if not the most frequent cause of chorea. M. Guersent, however, says it is not the fear which causes the chorea, but the disposition to this malady which causes the child to be so easily affrighted.

Fright I believe acts in two ways in producing the phenomena of chorea. In the first place by directly disturbing the nervous force, as a blow on the forehead or the poison of malaria would do; and secondly by affecting the action of the various emunctories so that the depurative processes are not healthfully performed, and toxæmia is thus developed. No one can be ignorant of the influence of our emotional system on the functions of the various organs. Arrest of the secretion of the gastric juice, of the menstrual flow, the sudden development of jaundice, convulsions and even death in children at the breast, all have followed sudden fright or violent anger. Hence chorea may be developed immediately or remotely. Romberg reports a case coming on a few hours after fright, while Gull reports an interval of nine months to have elapsed before the manifestation of the disease.[1]

Rheumatism as a concomitant, and, as it is believed, a provocative of chorea, has long been recognized. Dr. Addison and Dr. Bright have especially called attention to this as an exciting cause of chorea. The belief has been expressed that in almost every instance there is mitral disease in chorea. The authorities quoted are of great weight, but after a careful observation of many cases of chorea during the last ten years it has not happened to the writer to find this association a frequent, much less a constant one. Bellows murmurs referable to anemia and their temporary occurrence, from, as I believe, a sort of choreic spasm of the columnæ carneæ

[1] A curious case of *chorea cured by fright* is recorded by Dr. Hughes (in Guy's Hospital Reports, vol. iv., N. S., 1846, p. 36). A girl who had been cured of a former attack of chorea had a return of her complaint. She was going to the hospital to apply for readmission, but on her way was much alarmed as she passed over London Bridge by a person being run over. She, however, pursued her course. On her arrival at the hospital, both she and her mother were surprised to find that the complaint had left her. She remained well.

and their tendinous chords, causing irregular action of the auriculo-ventricular valves, are not unfrequent, but a persistent endocardial murmur due to mitral disease is certainly not often met with in choreic patients as we see them in our American hospitals.[1] That the irregular movements of chorea are not confined to the extremities is well known. Romberg relates an instance where the diaphragm, the intercostals, and other muscles of respiration were spasmodically affected in a case of chorea. Spasm of the glottis is also related, and it has been even suggested that stammering is but an instance of chorea of the organs of speech. Dr. Pepper, of the University of Pennsylvania, informs me that he has known incontinence of urine to interchange with chorea of the external muscles, and conversely.

While thus expressing the belief that mitral disease is by no means a constant association of chorea, I do not doubt that the irritation of rheumatic toxæmia in a person predisposed to chorea may be a determining cause of that disease, and that this too may act directly or indirectly, on the peripheral or ganglionic structure, or involve disorganization of the spinal membranes or substance. Hence the very marked difference in the intensity with which the symptoms of chorea show themselves. Thus, it may affect the intercranial structure, producing symptoms more serious even than those of chorea. Mesnet,[2] in an essay on certain cerebral accidents which developed themselves in the course of rheumatism, mentions a case of chorea occurring with articular rheumatism with symptoms of rheumatic meningitis, as well as cases of rheumatic disorder of the brain associated with more general convulsive movements, disturbance of all the principal functions, and proving mortal in a few hours; this last by Stoll is called rheumatic apoplexy. M. Vegla quotes three such cases.[3]

Coley[4] mentions a case of chorea in which a translation of rheumatic irritation to the fibrous coat of the spinal marrow produced fatal meningitis. In a number of cases reported by Hughes,[5] eight out of fifty-eight had their origin in rheumatism. Dr. Hughes thinks it is probably only a sympathetic irritation of the spinal marrow. Dr. Watson[6] thinks, in some cases of chorea with coincident rheumatic cardiac disease, that some morbid condition of the spinal marrow might have arisen simultaneously with the cardiac inflammation, or that the cardiac disease might have been an eccentric exciting cause of the disorder of the muscles; or that it may be from a diseased blood causing articular cardiac disease and spinal disorder. This

[1] Romberg (Disorders of the Nervous System, translated by E. M. Sieveking, M. D., etc., p. 53 *et seq.*, vol. ii.) has rarely found chorea with disease of the heart.

[2] Archives Générales de Médecine, tome vii. 5 série, p. 704.

[3] Ibid., tome ii. 5e série, Paris, 1853.

[4] Pract. Treatise Diseases of Children. By James M. Coley, Philadelphia, 1846.

[5] Guy's Hospital Reports, vol. iv. N. S., 1846, p. 36, *et seq.*

[6] Lectures on the Principles and Practice of Physic, by Thomas Watson, London.

last opinion which I have expressed, as coinciding with my own views, was also that held by Dr. Begbie, and more recently published by Dr. Bond.[1]

The irritation produced by intestinal worms, by constipation and the accumulation of feces in the bowels, is without doubt a frequent cause of chorea. This irritation may be developed directly or indirectly, directly by pressure on the peripheral nerves, and indirectly by the altered condition of the blood produced, the absorption of fetid gases and the general depression of the system which attends this condition. Hence, the value of purgatives as so highly recommended by Dr. James Hamilton,[2] and which were relied on by many of his cotemporaries. Hence, too, their failure and positive hurtfulness in cases of chorea not due to this cause.

Irritations connected with the teeth would seem to have more to do with the development of chorea than we would at first suspect. A case is reported in *Archives Générales*, p. 538, tome v., in which chorea was induced by a carious tooth, and disappeared with its withdrawal. Monro, the younger, used to state in his lectures that he had several times observed the disease to occur in children about the period of the second dentition, when the former set remained, or when the new set were shining through the gums, and that he had speedily cured the disease by drawing the first teeth, or by lancing the gums.[3]

The toxæmia which may be supposed to result from the repression of cutaneous eruptions would satisfactorily explain the numerously reported cases by the earlier writers of chorea produced in this manner. Thus, Darwin refers to two instances in which he had seen St. Vitus' dance occur after cure of the itch by wearing a mercurial girdle, and relates a case of chorea having appeared in a young girl wearing such a girdle. He ordered her to sleep with her sister who had the itch, and thus reacquiring the itch she was cured of the chorea![4]

In the same category we may class the results of sudden arrest of the secretion of the skin. Thus, Romberg records a case of chorea from suppression of the perspiration of the feet, from which, in this case, "the patient was cured by a domestic remedy, common in Berlin, which consists of introducing the feet into a bag containing living ants with their eggs, while they are being roasted by a hot stone."[5]

This doctrine of a poisoned blood acting as a determining cause of

[1] On the Pathology of Chorea, by Francis T. Bond, Brit. and For. Med. Chir. Review. July, 1860, p. 201.

[2] Observations on the Utility and Advantage of Purgative Remedies in Several Diseases, by James Hamilton, M. D., etc., 2d ed., p. 86, *et seq.*, Edinburgh, 1806.

[3] Reese's Cyclopedia (Am. ed.), vol. viii. Part 1. Article, Chorea.

[4] Zoonamia, or the Laws of Organic Life, by Erasmus Darwin, M. D., &c., vol. ii. p. 424. Under the head of "The Itch," Darwin includes numerous cutaneous affections.

[5] Romberg, op. cit.

chorea is, after all, very much a return to the old theory of Sydenham,[1] and to that of humoral pathology, towards which we all seem to be rapidly recurring.

Vicious habits, exhausting discharges, protracted illness, as in a case of typhoid fever reported by M. Blache,[2] ending in anemia or other depravation of the blood, may excite chorea in a choreic diathesis. Fully to appreciate the action of these agencies, we must bear in mind that for the proper development of nervous force we must have not merely the great central reservoirs, their efferent and afferent cords, but, what is too much overlooked, a healthful constitution of the blood, especially with reference to the proportion of its red corpuscles. If this deviate in any marked degree from the recognized healthy standard (130 parts in 1000), we have irregular movements and other phenomena resulting, as seen in the hysteria and neuralgia of anemic women. Nor must we omit from our consideration the importance of a normal temperature (about 100° F.), any marked deviation from which is also characterized by impairment of nervous influence.

Several cases of chorea are reported which were attended with furuncles and gangrenous ulcers. These symptoms are not unlike those of *raphania* or ergotism, in which a poisoned blood is associated with violent convulsive movements of the extremities.

I have said that the source of the irritation might be centric or eccentric. As an illustration of the former, I may quote a fatal case reported by Dr. Bright,[3] in which, with other lesions, there were found five or six bony plates attached half way down the spine to the pia mater by small peduncles. Stiebel, quoted by Romberg,[4] considers swelling of the seventh cervical vertebra, and Froriep (op. cit.) tumefaction of the odontoid process, as an exciting cause of chorea.

Uterine irritation plays an important part in the causation of chorea, and this irritation may be due to various conditions of the organ. The greater frequency of this disease in females than in males has long been admitted, and its occurrence from ten to fifteen years of age, or later, has been explained by the important physiological changes which accompany the development of puberty. Local hyperæmia, the failure or derangement of the menstrual flux, changes in the structure of the organ, are all prolific sources of chorea. I have before alluded to the *modus operandi* of disorders of the catamenia, and now refer chiefly to the other forms of uterine

[1] "Now this affection arises from some humour falling on the nerves: and such irritation causes spasm." Sydenham, op. cit., p. 199.

[2] Dictionnaire de Médecine, tome vii. p. 543. Paris, 1834.

[3] Reports of Medical Cases, by Richard Bright, M. D., &c., p. 490, *et seq.* London, 1831.

[4] Romberg, op. cit.

irritation. Thus,[1] a case is reported by Richter of chorea in a girl æt. 14, which terminated fatally in less than three weeks, in which the whole body of the uterus was found hard and completely scirrhous. Ingleby[2] quotes Mr. Bedingfield to show that uterine irritation, independent of pregnancy, may produce chorea, as in a case due to deranged menstruation. Dr. Bright[3] mentions a case in which the uterus and ovaries were more or less changed in structure; and a case is mentioned in the *Medical and Physiological Journal*, vol. lvii. p. 240, in which the uterus was positively inflamed. Alterations in the ovaries, or their appendages, have been sufficient to develop chorea: thus fatal cases are reported in which, on *post-mortem* examination, "nothing was found to account for the disease but a deposit of bony or sabulous matter in the fimbriated extremities of the Fallopian tubes."[4]

But a cause of chorea to which I wish to call attention is that of pregnancy, and I am the more induced to do this from the belief that among us it has not received the attention which it merits, and from the fact that during the past summer three cases of pregnancy associated with chorea have come under my care.

Even in the early history of St. Vitus' dance this association seems to have been noticed. Thus Burton, in his *Anatomy of Melancholy* (quoted by Hecker,[5] p. 92, note), alluding to the dancers, says: "'Tis strange to hear how long they will dance, and in what manner over stools, forms, tables even, great bellied women sometimes (and never hurt their children) will dance so long that they can stir neither hand nor foot." Schenckius, treating of epilepsy, which if carefully read will be found not to describe epilepsy merely, but hysteria and chorea, alludes to the association of convulsive movements and pregnancy.[6] Dr. J. T. Ingleby (*op. cit.*) relates five cases of chorea associated with pregnancy: two of these patients recovered, one before and one after delivery: three proved fatal; in one of these death

[1] Richter, quoted by Eberle, Pract. of Medicine, Philada. 1831.

[2] Clinical Lectures to the Students at Birmingham, by J. T. Ingleby, M. D. London Lancet, 1840, p. 783.

[3] Medical Reports, by Richard Bright, M. D., &c.

[4] Bond on Chorea, op. cit.

[5] The Epidemics of the Middle Ages, from the German of J. F. C. Hecker, M. D., &c. Translated by B. G. Babbington, M. D., &c.

[6] Schenckius, *Observationes Medicorum rerum, &c.*, Francofurti, 1609, Lib. I. *De Epilepsia*, quoting older authors, says: "I have seen certain pregnant women affected with epilepsy and not cured until delivery, altho' better for bleeding." Another case is mentioned in which the patient was not cured until parturition, and in which convulsive movements were due to the presence of a dead and putrid fœtus. He says this epilepsy does not render abortion necessary except in a very vehement case; he recommends moderate bleeding from the arm or leg. He mentions, among the causes of epilepsy, fright from demons.—*De Spasmo*, pp. 128-9.

occurred from exhaustion after delivery. Dr. J. C. W. Lever[1] reports five cases of chorea occurring to pregnant women. In the first case, in which "conception took place ere the torch of Hymen was extinguished," the phenomena were those of aggravated chorea. These symptoms continued until delivery, after which they at once disappeared. At her next pregnancy this same patient was similarly attacked, but, what is extremely interesting, an accidental fright having induced a miscarriage at the fourth month, the choreic symptoms disappeared with the expulsion of the fœtus. In the last of the cases reported, the choreic disorder continued up to the time of her confinement, when, it is stated, "they ceased as soon as labour-pains commenced." The treatment in all these cases seems to have been the occasional use of purgatives and sulphate of zinc. The question of inducing premature labour was under consideration in the most aggravated case. Bright (*op. cit.*) mentions pregnancy as a cause of chorea. Romberg (*op. cit.*) reports three cases, and after referring to the observations of others, gives the following as his own deductions: "That in the majority of cases there had been no chorea in early life. Several females were exempt during the first pregnancy, and were attacked during the second. In two cases the chorea returned during the following pregnancy. The chorea of pregnant females is almost always bilateral. Chorea rarely exists in these cases after delivery, and abortion is rarely needed." Braun[2] refers to this subject, and states that the chorea of pregnant women is usually associated with hydræmia, that it is generally completely cured only after delivery at the full term or prematurely, and that it is rarely dangerous to the life of the mother. Lee[3] reports a fatal case of chorea from pregnancy; and in a very recent work, *Tanner on Pregnancy*, the subject is ably discussed.

Dr. M. Duncan[4] reports two highly interesting cases of a mild form of chorea occurring in pregnancy coming under his notice, affecting chiefly the lower extremities, very annoying at night, and chiefly on lying down in bed, when they continued so long as to deprive the patients of sleep, occasionally affecting the hands, the forearms being still. In the second of these cases these distressing symptoms were most marked at the sixth month of pregnancy. The patient was thin and of unhealthy appearance, and suffered much from vomiting after each meal. In the evening involuntary movements of the lower limbs came on, causing great annoyance, and continuing until she went to bed. After a short interval of sleep they recommenced, and lasted for several hours. They remained absent next day on

[1] Guy's Hospital Reports, 2d series, vols. v. and vi.

[2] The Uræmic Convulsions of Pregnancy, &c., by Dr. Carl. R. Braun, &c., translated from the German, with notes, by S. Matthews Duncan, M. D., &c., pp. 130 and 172.

[3] Clinical Midwifery, London, 1848, p. 119.

[4] Edinburgh Medical and Surgical Journal, January, 1854.

awakening until near evening. Both of these cases yielded to doses of the carbonate of iron, gr. x ter die, and moderate doses of laudanum at bedtime. These cases correspond closely to the condition known to the earlier writers as *anxietas tibiarum*, and to them the term *scelotyrbe*, employed by Galen, and which is believed by many to have been used by him as synonymous of our chorea, corresponds in its strictest etymological meaning—Το σκελος limb, ἡ τυρβη restlessness. I shall now, as concisely as possible, relate a case coming under my care of *partial chorea, anxietas tibiarum, scelotyrbe:*—

CASE I. Mrs. ——, a highly intelligent lady, aged about 35, the mother of four children. Excepting the usual morning sickness, had never suffered from any unpleasant symptom in her former pregnancies. Had never had chorea. In her last accouchement she suffered from great nervous exhaustion. About the end of the fourth month of her pregnancy she began to feel restless, with uncontrollable nervous movements in both feet. This restlessness was increased by sitting for a length of time, and was greatly aggravated by lying down, whether by day or by night. About this time her physician, to whom she was greatly attached, died suddenly. These distressing sensations had continued for two months when I was called to see her. At that time the irregular movements and abnormal sensations were such as to entirely prevent sleep. They were almost entirely confined to the lower limbs, though there were occasional nervous twitchings of the hand, of which the patient was scarcely sensible. She described these feelings as being of the most wretched kind, utterly unfitting her for attending to her domestic duties Having been long familiar with the cases so accurately described by Dr. Duncan, the nature of this case was at once obvious, and the treatment advised by him was adopted. She had previously taken small doses of valerian without any appreciable benefit. I directed for her, after the bowels had been freely moved, f℥ij of solution of sulphate of morphia with f℥j of sweet spirit of nitre at bedtime, and the use of lozenges of the subcarbonate of iron gr. x after each meal. The opiate gave her a good night's rest, the first she had enjoyed for a long time, but was followed next day by an increase of morning sickness, from which she had continued to suffer. Such, however, was the relief it afforded that it was continued for a few nights, subsequently replaced by Hoffman's anodyne, with directions to resort to the morphia if necessary. Under this treatment and a generous diet she steadily improved, and although she was liable to occasional nervous disturbance up to the time of her delivery, this was so slight as to give her no annoyance. She was safely delivered of a large male child, but the latter stages of labour were complicated with retained placenta. She subsequently had an attack of circumscribed metritis, during which time she suffered greatly from disorder of her nervous system, though of a character different from that during pregnancy, almost amounting to puerperal mania. Under the use of quinia, wine, and nutritious food she recovered, and now, nine months since, both she and her infant are in excellent health.

The next case coming under my care of nervous disorder connected with pregnancy was of a very different character, viz.:—

CASE II. *Fatal Chorea associated with Pregnancy.*—J. E., æt. 17, entered Pennsylvania Hospital May 28, 1860. The following history of her

case was subsequently learned: She was a pretty, delicate child; had never had chorea. Under promise of marriage she was seduced and became pregnant. It was noticed by her mistress that she avoided society, hid herself in the water-closet for an hour at a time, fell down stairs, and was seen on one occasion to throw her right arm up in the air with a violent rotatory movement. These symptoms of chorea steadily increased in intensity. Three days before her admission she was visited by her mother, who had learned for the first time of her pregnancy, and who rebuked her in the most bitter manner; soon after this the girl became violently convulsed, which convulsive movements continued till she was brought to the hospital. It is difficult to conceive a more melancholy spectacle than this poor creature presented. Every part of the body was in violent agitation; she was unable to walk, and when laid on the bed was jerked about in the most violent manner, requiring the constant attendance of assistants to prevent her from being tossed out of bed. The features of the face were in violent motion, the eyes constantly wandering to and fro, her body covered with bruises, unable to articulate except in syllables; she still retained her reason, and as well as she could implored relief from us. She was placed in a warm bath, the bowels were freely moved, and an anodyne enema given, but both this and a subsequent injection of assafœtida were imperfectly retained, in consequence of the constant jactitation from which she suffered. A small blister was next applied to the back of the neck, and dressed with one grain of acetate of morphia. This last somewhat mitigated the violence of the muscular movements, but they soon returned with frightful violence. Next morning the gradual inhalation of ether was resorted to. Under the influence of this she slept quietly for two hours. On awakening she was seized with convulsions of the most terrific kind, and she died soon after. Up to this time the pregnancy had been denied by both her mother and as far as possible by herself. Permission to make an autopsy at the hospital was refused; it was subsequently obtained at her mother's house, but was obliged to be done in a hurried manner. I have learned from my friend, Dr. Livezey, the house physician, to whom I am much indebted for notes both of this and the following case, that "the brain was found very much congested throughout; the heart small and firm, with a bead-like deposit on the aortic valves. The spinal cord was not examined. The uterus was found to contain a fœtus of about six months."

In little more than a fortnight after the death of this poor girl, another case of chorea with pregnancy presented itself at the hospital.

CASE III. *Chorea associated with Pregnancy; Recovery.*—M. A., married, æt. 17, was admitted into the hospital, June 16, 1860. She stated that she had always been nervous, and had had an attack of chorea about a year ago, which was but slight. Had been pregnant for three months before her admission to the hospital. Up to the time of this attack, about two weeks since, she had been well, though very nervous. At this time she was frightened, and about an hour afterwards found she had twitching of the arms and legs, which had increased up to this time. When received, there were decided, though not violent, movements of the upper and lower extremities. Her tongue was clean, bowels regular, pulse eighty, and rather feeble. After a warm bath, she was ordered to take ext. belladonnæ gr. ¼; pil. ferri carb. gr. ij, t. d.; and to have a bath with sulphuret of potassium daily. A slight amelioration in her symptoms took place, but on the 3d of July they were so severe that, in consultation with my colleague, Dr. J. F. Meigs, it

was determined to substitute for the iron and belladonna, *precipitated sulphuret of antimony gr.* ¼, and *Dover's powder gr. ij*, every two hours. Although our patient slept better the next night, her condition did not improve, and three days later she was decidedly worse, so much so as to render assistants necessary to keep her from falling out of bed. At the next consultation it was determined to abandon the antimony, and to give her the *subcarbonate of iron* in teaspoonful doses three times daily, and *an injection of laudanum* (*sixty drops*) twice daily. This last gave her a good night's rest, so that she was much quieter next day. This treatment was continued for several days, occasionally giving a purge of compound powder of jalap. The amendment was steady, the opium was gradually withdrawn, and she returned to her home, having for a week before been free from any choreic movements. She was subsequently safely delivered of a dead child, and has had no return of her chorea.

There are one or two points of interest in these last cases which may be briefly referred to. It will be noticed that in both conception took place at an early age—sixteen years; that in all three there were moral causes conjoined with the uterine irritation, which may have co-operated with this latter cause, viz., in the first, the sudden death of a beloved physician; in the second, the disgrace of seduction; in the third, a sudden fright. In but one had chorea previously existed, and in that but slightly. It never happened to me to see these patients asleep, but I am assured by the house physician, that the choreic movements, though mitigated, did not cease during sleep. Abortion was under consideration in the last case, but fortunately was not required. In the fatal case, the pregnancy, though not doubted by us, was steadily denied by the patient and her mother. Would premature labour have saved the poor creature from death?

The cases given by Duncan, and the first reported by the writer, may, perhaps, be regarded as cases of *partial chorea*. The limitation of this disease is, however, much more marked; thus West mentions twitchings of the muscles of the face, neck, mouth, and muscles of the right hand. A case is well known to Philadelphia physicians which manifests itself by paroxysms of violent rotatory movements of the right hand, and Dr. Babbington reports a case of violent adduction and abduction of the stump of the left arm three months after amputation, no other part being affected. Cases are recorded in which the unnatural movements showed themselves by a continued propulsive, and others by a continued retrograde movement on the part of the person affected.

Among the many fanciful freaks of this disease, I may mention a case of chorea, coming under my notice while resident physician at the hospital, in which with a want of control over the muscular movements there was also a want of control over thought and utterance, so that one of our most distinguished physicians was usually greeted, on his entrance to the ward, with a salutation not suited to ears polite, to his own surprise and to the evident mortification of his patient.

Much attention has been called by authors to a peculiar form of chorea,

which consists chiefly in striking upon the knees with one or both hands. This has been named *malleation*. Others have described a peculiar rotatory movement of the head, or of the entire body. The most remarkable case of this kind on record is that by Dr. Robert Watt, in the *Medico-Chirurgical Transactions*, whose patient continued for a month turning round like a top. This case, with which the profession is familiar, is but a type of similar instances which I need not quote. Recently, Dr. Winn[1] relates a case of a child, nine years old, who, from infancy, had an uncontrollable rotatory movement of the body from left to right. In the same journal (p. 623), a case is reported of a female child, three years old, who was frequently turning round in the cradle, for months together, from left to right, raising herself on her elbows and knees, and uttering a low moaning cry. I have referred to these cases because they nearly approach an affection closely allied to chorea, respecting which little has been written, and of which little seems to be known. I allude to the disease known as *Salaam Convulsions*, so called because of the peculiar and repeated bobbing of the head of persons thus affected, reminding one of the salaams of the East, or of the nodding of Chinese toys.

In the year 1850, while resident physician at the Pennsylvania Hospital, a case of this disease came under my notice. A little girl, between three and four years of age, was admitted for disease of the scalp (probably porrigo). She was a bright, intelligent child—unusually so for her age. Soon after her admission, she was found sitting up in bed nodding her head almost to her knees, uttering at the same time a low moaning cry as if putting her doll to sleep. It was ascertained that these movements were beyond her control, that they lasted from five to ten minutes, or in some attacks much longer; that they occurred in paroxysms, and that they varied very much in intensity. An attack would often be brought on by the visit of the house surgeon, when the little one would salute him in her pleasant way, with "Good morning to the doctor," repeated two or three times, and then be seized with this violent bobbing motion, lasting many minutes, during all which time she would continue humming her strange chant.

Under treatment, addressed to the disease for which she was admitted, attention to the bowels, and the use of tonics, she entirely recovered. Of her previous history I have no record. Through the kindness of Professor Pepper, I am permitted to refer to a similar disorder affecting an adult. A lady, who was suffering from uterine irritation, came under his care. At his first visit he noticed that she bowed very low, as if making a salutation. The bowing, however, continued, and had existed at intervals for months. Under the use of remedies addressed to her uterine disorder, and the exhibition of antispasmodics, valerian, &c., she entirely

[1] London Medical Times and Gazette, 1855, p. 532.

regained her health. So far as I am aware, attention was first called to this strange disease by Dr. W. J. West,[1] occurring, as it did, in his own child. It consisted, according to West, of repeated bobbings of the head forward, succeeded by an immediate return to the upright position. These bobbings were repeated at intervals of a few seconds, ten, twenty, or more times, lasting a few minutes. The affection is a rare one. Sir Astley Cooper had never seen a case of the kind before this one was brought to him. By Sir Charles Clarke, who had seen four cases, it was named *salaam convulsions*. Dr. Locock had seen but one other case. Dr. Barton,[2] of Village Green, Pa., reports the case of a little girl, ten years old, thus affected, in which the disease yielded promptly to purgatives. Dr. Bennett,[3] of Danbury, Conn., records, curiously enough, like Dr. West, the case of his own son, in whom, after great suffering, the disease at last yielded to blisters twelve inches long on both sides of the spine. In both of these cases it was referred to irritation of the spinal meninges; in the latter directly, in the former indirectly, from fecal accumulations. Dr. P. H. Bird,[4] referring to this rare disorder, quotes Dr. Newnham (*British Record of Obstetric Medicine*), Dr. Wiltshire (in a paper read before the Westminster Medical Society), and Dr. Faber (in *Schmidt's Jahrb.*, vol. lxvii. p. 213), as having written on this subject.

Post-mortem investigations have failed to indicate any one organ as uniformly affected in chorea. In "a tabular notice of the morbid appearances in ten persons affected with chorea" (Hughes, *Guy's Hosp. Reports*, cit. supra), the cerebral meninges were more or less affected in six cases; the brain was soft in six; firm and healthy in one, normal in another, not examined in one. Serous, and in one instance sanguineous effusions were also noticed. In four of these cases the spinal marrow was examined; in one of them there were soft adhesions of the arachnoid, and the gray matter was dark. In another, the adhesions were old, vessels large and numerous; in a third, the medulla was softened; while in the fourth, there was nothing abnormal in this structure. In four of the same cases, there was evidence of pericardial inflammation of varying intensity. In two, the heart was found to be large; aortic disease existed in one, tricuspid in one, mitral in three: this last consisting either of mere thickening, or of delicate vegetations on the valves; in two instances the heart was found healthy. In most of these ten cases there existed congestion of the liver and other abdominal viscera. Effusion and cerebral softening are reported by Ingleby (*op. cit.*). Romberg (*op. cit.*) reports three fatal

[1] London Lancet, 1841, p. 724.

[2] Am. Journal of Medical Sciences, Jan. 1843, p. 243.

[3] Ibid., April, 1843, p. 364.

[4] Pract. Treatise on the Diseases of Children, &c., translated from the French of M. Bouchut, with notes and additions by Peter Hinckes Bird, F. R. S. E., &c. London, 1855.

cases, in two of which some softening of the brain was found after death, and in one proving fatal by peritonitis, the brain was healthy, but the upper portion of the spinal cord was softened. Softening of the brain is reported, in a fatal case, by Cruveilhier. Other pathologists have failed to find these appearances, and by most they are looked upon as coincidences rather than as characteristics of chorea. Those disposed to pursue this subject may find further illustrations in the writings of Bright, Serres, Rufz, Seé, Lee, Tanner, and others before quoted in this paper.

Respecting the frequency of chorea little need be here said, although on this subject very different opinions have been expressed. It would seem to be rare in warm climates; even the different portions of our own country seem to modify its frequency; thus, Dr. Dickson,[1] writing from South Carolina, states that it is a very rare disease. This certainly cannot be said of it in Philadelphia. I never pass a term of service in our hospital without having cases under care.[2] Dr. Babbington[3] writes: "Not a week passes in which some cases of chorea are not presented for admission at most of our hospitals. We had nine cases in the clinical ward of Guy's Hospital alone, during the past season, and every practitioner of experience has seen more chorea patients than he is able to estimate by precise numbers." My own observation would lead me to the conviction that though of frequent occurrence in hospital practice it is rare with us in private practice, especially among the better classes, a statement which cannot be made of many nervous diseases.[4]

In the treatment of chorea much empiricism has prevailed, and the list of the remedies which have been resorted to is a large one. Instead of enumerating them, I cannot do better than refer the reader to the admirable summary of M. Valleix.[5]

With the views already expressed respecting the nature and causes of chorea, little more need be here said of its general pathology or treatment. Believing it to be the result of irritation, varying in its origin and mode of action, affecting a highly nervous organization, the great centres of

[1] Essays on Pathology and Therapeutics. By S. H. Dickson, M. D. Charleston, 1845.

[2] M. Rufz found, out of 32,976 children received in the Hospital des Enfans, 189 cases of chorea. Arch. Générales, iv. 239. Paris, 1834.

[3] Guy's Hospital Reports, vol. iii. p. 417.

[4] K. F. H. Marx, Professor in the University of Göttingen, in his report "On the Influence of Civilization in lessening the Number and Severity of Diseases," says of chorea: "Its decrease is to be expected with more certainty as medicine is constantly studying the changes of the human body, and education every day becoming more circumspect. Indeed cases of the disease are now rather rare."—*Brit. For. and Med.-Chir. Rev.*, vol. xviii. p. 237.

[5] Guide du Médecin Practicien, &c., par F. L. I. Valleix, p. 668, tome quatrième. Paris, 1853.

which are found in the brain, its appendages, and the spinal marrow, the principles of treatment become obvious.

All specific medication is as uncertain as it is unscientific.

If the disorder be due to any great shock to the nervous system, to fright, for instance, acting on the suggestion of M. Guersent, we must endeavour to correct the excessive nervous sensibility which renders the child so easily disturbed. In the list of tonics and of antispasmodics recorded by Valleix, in the well-directed gymnastic exercises of M. Blache, we have the means most likely to prove efficient. If it be from toxæmia of any kind, that from retained or repressed secretions of the skin, the kidneys, or from rheumatism, we must resort to eliminatives to free the blood of its poisonous constituents. If it be due to a depraved condition of the blood, the result of vicious habits, of exhausting discharges, of protracted illness, or even of too rapid growth, we must correct this condition by remedies addressed to the invigoration of the system, by nutritious, easily assimilable food. Here too with particular advantage we may resort to the chalybeates of Elliottson, carefully avoiding all exhausting purgatives or other debilitating measures. If, on the other hand, it coexist with a highly sthenic or even plethoric condition, the opposite course of treatment would be required, and antimony in large or in small doses, or perhaps even the lancet, as recommended by Sydenham, would be called for. If the cause be local, seated for example in the alimentary canal, whether in the form of intestinal worms or of accumulated feces, free purgation becomes necessary, and here the treatment of Hamilton would be invaluable. If the constipation be due to a paralytic condition of the bowel, or if there be a general debility of the muscular system, nux vomica may impart tone to that structure, and here the sulphate of strychnia of M. Trousseau would be found beneficial. If the local irritation be in any way connected with dentition, the mode of treatment would be at once obvious. If the disorder be referable to uterine irritation in its various phases, we must adapt our remedies to the nature and cause of this irritation. Amenorrhœa and menorrhagia would each have its own appropriate treatment. If the chorea result from incurable organic disease in the uterus, or elsewhere, although the cause be irremovable, we can at least mitigate the sufferings of our patient, and perhaps, by the exhibition of opium or of belladonna, render the nerve centres less susceptible to the irremovable cause of irritation. If the source of the irritation be found in the physiological function of the pregnant uterus, we may do much for our patient by moral and by physical agencies. In the cases I have reported there has been expressed my estimate of the value of opium in this form of chorea, as it has been long ago found useful by Armstrong and others in chorea arising from other causes. I recur to this subject because I wish to state my conviction of the advantages to be derived from its local as well as its constitutional effects; in other words, to say that I believe much more will be gained by the use of *laudanum*

enemata than by the exhibition of the opiate by the mouth. I cannot but believe that not only is the system brought under its influence, but that a local anæsthesia is thus speedily induced, which is of itself of great benefit.[1] Were another case of chorea with pregnancy to present itself to me, I should, after the bowels had been moved by gentle laxatives (not by drastic purges, which are themselves irritants), resort to injections of laudanum, repeated sufficiently often to keep the system under their influence, and continued until the system had become accustomed to the cause of the irritation, or the diseased habit overcome. Of course the existence of great cerebral congestion would contraindicate the free use of opium, while, on the other hand, this treatment need not interfere with the exhibition of medicines likely to improve the general tone of the system, the preparations of iron or other tonics.

PHILADELPHIA, February 13, 1861.

ART. III.—*On the Antagonistic Effects of Opium and the Mydriatics, Illustrated by Cases of Poisoning in the Human Subject.* By CHAS. CARROLL LEE, M. D., Resident Physician to the Pennsylvania Hospital.

ON the 3d of September, 1861, three well-marked cases of poisoning by stramonium seeds were admitted to the Pennsylvania Hospital. One was a man, aged 31, the other two were women, aged respectively 34 and 58 years.

The history of the accident was as follows: The two women were about moving into a new house, and the man was assisting them with their furniture, when, in passing an unoccupied room, he saw in an open closet a bottle filled with what he supposed to be brandy. He poured out a cupful, drank it, and offered some to the women, who both drank of it—the elder about a gill, and the younger only one or two mouthfuls. A child of the latter was also given a little of the mixture, and it was in this case that the effects of the poison were first noticed. Within four or five minutes after taking the draught, the child became violently flushed in the face, the eyes glittered and rolled about, and it tottered so as almost to fall from its chair. This alarmed the mother, who at once supposed they had taken poison, and, though already giddy and half blind, she managed to run with the bottle to a neighbouring druggist, who confirmed her suspicions. With

[1] One reason why enemata of laudanum are not more relied on in the treatment of disease, is the fact that, as usually given, the amount of liquid (f℥ij of starch water) is too large to be retained. Excepting in cases of rectal inflammation, it is much better to use but *half an ounce of tepid water*, which is rarely rejected, and acts promptly.

much difficulty she again reached her house, where she found the other woman and the man lying speechless on the floor; and, as their friends who crowded around them could afford no assistance, the three were put into a wagon, and driven without further delay to the hospital.

The bottle, which contained a number of small, black, kidney-shaped seeds, and a little whiskey, was brought with them, and, as soon as examined, the seeds were pronounced *stramonium*. This was confirmed by the appearance of the patients, which was very striking.

The man and the elder woman were nearly comatose, their faces flushed to an almost violet hue, the conjunctivæ injected, and the pupils were insensible to light, and so strongly dilated, as to leave visible merely a rim of iris; the skin of the face and upper extremities was burning hot, the tongue and throat parched and dry, respiration slow and laboured, pulse 100, and very tense and full.

The younger woman had taken a smaller dose of the poison than the others, and had reached only the maniacal stage of its influence; the skin was scarlet and burning hot, and the mydriasis as marked as in the other cases, the tongue parched, intense thirst, but no constriction of the fauces on swallowing; the respiration, however, was hurried, the pulse fluttering, and beating 140 to the minute. The patient was violently delirious, resembling, in a marked degree, the most excited stage of *delirium tremens*, struggling to get out of bed, and continually rolling from side to side; she was unable to stand by herself, and, unless supported, fell forward to the ground. When her hands were not restrained, it was observed that she pursued imaginary objects in the air, or picked at the bedclothes, as in the delirium of typhoid fever. No frothing at the mouth, or relaxation of the sphincters, said by Taylor to characterize poisoning by stramonium and belladonna, occurred.

Treatment.—As neither of the women had vomited since drinking the poison, I first resorted to the stomach-pump, which, with the assistance of my colleagues, was used freely. About a pint of thin, dark-brownish liquid was pumped up, and carefully examined, but contained no seeds. The stomach was then washed out with tepid water, but no seeds were obtained. The symptoms being in all respects similar to those of poisoning by belladonna, an antidote to that narcotic, on which I place entire reliance, was next administered, viz.: *Opium* in doses sufficient to secure a full opiate impression, as indicated by contraction of the pupil. Forty drops of laudanum were immediately ordered to each of the women, and having at hand some of Magendie's Solution of Morphia—in this hospital only used for hypodermic injections—I gave them fifteen minims apiece, holding in solution a half grain of the salt, every half hour, until each had taken two grains.

As considerable debility had been induced by their struggles when the stomach-tube was used, a half ounce of brandy was added to each dose of

the morphia; this was deemed the more necessary because, notwithstanding the well-known stimulating effect of stramonium in the first stage, this period had already passed. The result justified our expectations; for in two hours the pulse of the younger woman had fallen to 90 beats per minute. This patient was now nearly well, and the other woman in a fair way of recovery; the morphia was therefore diminished to a quarter of a grain every hour, with an ounce of wine instead of brandy; this was continued through the night, and the following day the women were discharged from the hospital cured.

The man exhibited much the same symptoms as the women, catching and striking at imaginary objects around him, but the retina was insensible to light, for a hand passed close in front of the eye failed to make him wink, unless the cornea was touched; he was also more comatose at first, and with a more feeble and rapid pulse—150 per minute. Another alarming symptom was an apparent somnolency, which, according to some authors, marks only the worst cases. Thus, Dr. Stillé says: "At no period in the progress of the symptoms, *until death grows imminent*, is there the least tendency to sleep; on the contrary, there is an obstinate insomnia; and yet, on the recovery of the patient, he retains no distinct recollection of what has occurred."[1]

Before leaving home he had been given two or three emetics, which had acted very freely; the stomach-pump was therefore not used, and he was at once ordered forty drops of laudanum, to be repeated in ten minutes, after which he was given a half grain of muriate of morphia every half hour, until three and a half grains of the salt had been taken—a larger amount than in the other cases, as he had imbibed a much larger dose of the poison; this, with ice to the head, constituted his entire treatment. He rallied during the night, slept a little, and the next morning was able to walk, and read large type. Some abnormal dilatation of the pupil and vertigo remained, however, during the day; by evening he was quite well.

The effect of the morphia was equally evident in each of the foregoing cases. They had been brought to the hospital and subjected to treatment about an hour and a half after the poison was swallowed; within an hour after the first administration of the antidote—for such, I think, it may justly be considered—a decided amelioration of all the symptoms, especially of the mydriasis, was perceptible; while in three hours, the mildest case was quite well, and the other two so much improved as to excite no further uneasiness. That this improvement was not due merely to the stomach-pump or emetics is apparent, from the fact that the man, who had vomited profusely, presented the most alarming symptoms of debility and coma; while in the case of both the women, the fluid obtained through the stomach-tube resembled rather the ordinary contents of the stomach than the stramonium mixture.

[1] Therapeutics and Mat. Med., ii. 55.

There was every probability, indeed, that the small amount swallowed—and the concentrated strength of the mixture may be inferred from its effects—had been absorbed before the evacuants were used.

As corroborative of the results obtained in the preceding cases, and as further illustrative of the *mutual antagonistic influence* of opium and belladonna, a brief description of two other cases that occurred to me while Resident Physician in the Philadelphia Hospital, Blockley, may not prove uninteresting.

The first, a child, aged six years, had been given, in mistake for syrup of rhubarb, a drachm of *succus belladonnæ*, an unofficinal preparation, very concentrated, and only used in collyria. The characteristic symptoms of belladonna poisoning were almost immediately apparent; the child's face became scarlet, and it tottered and fell insensible to the floor. I was instantly sent for, and found the flush on the face deepening to a violet hue, the eyes fixed and staring, the pupils dilated to the utmost, tongue dry, pulse slow and bounding, and the child almost comatose. No stomach-pump was at hand, and I at once resolved to test the effect of opium. Twenty drops of laudanum by the mouth, and the same amount by the rectum, were simultaneously given, and at intervals of a half hour the dose of twenty drops was repeated, until the little patient had taken 120 drops in all. After the third dose the pupils began strongly to contract, the purple hue of face to fade, and in three hours the child was well, and running about the room.

The second case alluded to was, on the contrary, one of opium poisoning, occurring in a child aged two years. The quantity of laudanum taken could not be ascertained, for the mother who had given the drug (as was supposed for the purpose of infanticide), obstinately refused to answer any question on the subject.

Enough, however, had been swallowed to render a fatal prognosis almost positive. The skin was pale, cold, and clammy, pulse feeble, and beating only forty to the minute, respiration slow and laborious, pupils excessively contracted, and coma profound. A galvanic battery was sent for, but when obtained, was so out of order as to be useless.

Some tincture of belladonna, however, was at hand, and was instantly given in doses of fifteen minims, repeated at intervals of twenty minutes, until four doses were taken. The first perceptible change was after the second dose, when the temperature of the skin rose several degrees; this was gradual, but was distinctly felt by the hand.

A few minutes after the third dose of belladonna the eyes were carefully examined, and the pupils, although still contracted, were no longer insensible to light; the skin was much warmer, and a faint blush appeared on the face and neck; respiration twenty-five, pulse eighty-six per minute. When spoken to, the child now opened its eyes, and showed signs of intelligence; but, as some drowsiness yet remained, the fourth and last dose

of belladonna was given, at the same interval as before. Its effect was rather more rapid and striking than was desired; for in a few minutes after taking it, the child's face, neck, and arms became flushed as red as in the scarlatinal eruption, and the pupils dilated much beyond their proper size. The child started up in bed, shouted and laughed immoderately, and, in fact, exhibited every sign of the first stage of belladonna intoxication. Not wishing to substitute one poison for another, I now stopped the belladonna, and in less than an hour the scarlet blush was imperceptible, the pupils contracted and dilated regularly, and the child was to all appearances well; no vomiting or other disagreeable sequela occurred.

These two cases were typical ones of their kind. They were both strongly marked—the first dangerous, the latter almost hopeless; in both the antidotal effects of opium and belladonna were fairly and honestly tested; and, although a general conclusion cannot be drawn from isolated cases, a careful consideration of the phenomena will warrant the inference —1st, that the poisonous symptoms were promptly subdued by the remedy administered; and, 2d, that the antidote was safely given in doses which would have been surely fatal in health.

The knowledge of the antidotal powers of belladonna in cases of opium poisoning is not of very recent date. Dr. Graves first suggested that, in continued fever, with coma and contracted pupils, if an agent could be found to overcome the latter symptom, it might also relieve the other signs of cerebral derangement; and for several years past, cases analogous to the preceding have been reported in the journals. The first paper bearing directly on this point, with which I am acquainted, was read by Dr. Thos. Anderson, before the Physiological Society of Edinburgh, in Jan. 1854. He relates two well-marked cases of poisoning; the first by an overdose of muriate of morphia, which was cured by six drachms of tincture of belladonna. The second, an elderly woman, had taken five drachms of laudanum for self-destruction. The stomach-pump, electricity, and other measures were tried without effect, when Dr. Anderson resolved to administer the tincture of belladonna. He gave an ounce on the spot, and within the next half hour two drachms more. In five hours, all indications of opium poisoning had disappeared.[1]

Again, Dr. Mussey, of Cincinnati, reports a case of poisoning by an ounce of laudanum, in which, five hours after it had been swallowed, he gave first the extract, then the tincture of belladonna, until seven grains of the former, and one ounce of the latter were taken. Recovery was prompt and complete, without any of the peculiar effects of belladonna, except indistinct vision for a few hours.[2]

On the other hand, Mr. Bell, of Edinburgh, records two cases in which

[1] Monthly Journal of Med. Sciences, April, 1854.

[2] Boston Med. and Surg. Journal, February, 1856.

large quantities of morphia quickly subdued alarming symptoms of poisoning by hypodermic injections of atropia;[1] and I may add that, within the last six months, two others, precisely similar, have come under my notice, in this Hospital. In these, the poisonous impression was produced by injecting respectively the one-thirtieth and the one-thirty-fifth of a grain of sulphate of atropia.

Mr. Seaton, of Leeds, has related the history of ten persons who were poisoned by the berries of the atropa belladonna. In two of these cases the effects were slight, and required only an emetic. In the other eight the symptoms were alarming and well marked, especially wakefulness and active delirium. Opium was given to all; and in seven of the worst cases, the symptoms disappeared as soon as sleep and contraction of the pupil indicated its influence on the system. The eighth patient, who was a scrofulous woman, long out of health, took but little opium, and died.[2] In the *London Medical Review*, for August, 1860, there is a most interesting paper on the Significance of the Effects of Opium and Belladonna on the Pupil, by Richard Hughes, Esq., of Brighton. He discusses with much ability the relative and antagonistic effects of the pure narcotics and the mydriatics, and adduces numerous cases corroborative of the foregoing.

Dr. Lopez, of Mobile, describes the case of an apothecary, at the Marine Hospital, who poisoned himself by the application of a large belladonna plaster to the knee, after the cuticle had been removed; there existed nausea, giddiness, mydriasis, and extreme prostration. Having frequently tested the reciprocal influence of opium and belladonna, Dr. Lopez at once prescribed a drachm of laudanum, to be followed by fifteen drops every half hour until the symptoms abated. The first dose sufficed to antagonize the belladonna in thirty minutes.[3]

M. Brown-Séquard, while admitting that belladonna and opium have some properties diametrically opposed—thus, for instance, belladonna contracts the vessels of the spinal marrow, and opium, like strychnia, paralyzes them—says that in animals poisoned by opium, belladonna excited no influence, that he could observe, on the fatal symptoms. He further alludes to a case of poisoning by opium and belladonna taken simultaneously, and infers that their employment as mutual antidotes is nugatory.[4]

But unfortunately for these objections, no correct conclusion can be drawn from experiments made on the lower animals, as they are variously affected by narcotics. Thus, Dr. Anderson has given to cats and dogs enormous doses of morphia, without producing any appreciable effect; and to them five and six grains of atropia proved quite harmless. Rabbits will feed for months on belladonna leaves and have their pupils dilated all the

[1] Edinburgh Med. Journal, July, 1858.
[2] Med. Times and Gaz., Dec. 3, 1859.
[3] North Amer. Med.-Chir. Rev., Jan. 1860.
[4] Journal de Physiologie, Oct. 1860, p. 726.

time, but otherwise they are not affected. Blackbirds eat belladonna berries in large quantities, and do not die. It is, therefore, only to experiments on man that any value can be attached.[1] As no description is given by M. Brown-Séquard, of his last-mentioned case, it is impossible to accord it due weight in the scale; for aught we know, a large amount of opium and a small quantity of belladonna, or *vice versâ*, may have been taken.

In commenting on the influence of belladonna in the various forms of paraplegia, the same author denies that it is a stimulant to the nerve centres, and remarks as follows: "We will not speak here of its action on the brain: but as regards the spinal cord and spinal nerves, belladonna, far from being a stimulant, acts in diminishing the vital properties of these organs. As we have already said, belladonna is a powerful excitant of the bloodvessels, and especially of those of the spinal cord and its membranes. In consequence of this influence it diminishes the amount of blood in the vertebral canal, and, in so doing, produces a relative diminution of the vital properties of the spinal cord and its nerves. It is, therefore, in those cases, in which these vital properties are increased, that belladonna should be employed."[2]

Without at all calling in question M. Brown-Séquard's views on the physiological effect of belladonna, which, we must take for granted, are based upon accurate experimentation, I think the cases I have already adduced (and others might be presented by the dozen were it necessary) are sufficient to establish an undeniable antagonism between opium and belladonna. To what extent this antagonism exists, or whether its ground is the vascular rather than the nervous system, are points that I am neither prepared nor inclined to discuss. In his work on Epilepsy, as well as in the extract just given, M. Brown-Séquard has stated contraction of the capillaries to be the uniform effect of the internal administration of belladonna; and Mr. Wharton Jones, in his Prize Essay on Inflammation, finds that the application of a solution of sulphate of atropia to the small arteries causes constriction of their calibre, while opium largely and at once dilates them; yet no one can doubt that this is through their influence on the sympathetic, which is the motor nerve of the bloodvessels.

Our knowledge of the ultimate effects of medicines is, however, still in its infancy, and well aware that even acute and experienced observers are apt to stumble in this field of inquiry, I have endeavoured to confine myself strictly to facts. These may, perhaps, have been misinterpreted throughout; but I have presented them for what they are worth, in the hope that they may contribute, in some degree, to illustrate so important a subject as the toxicology of the narcotics.

[1] Edinburgh Med. Journ., June, 1860, p. 1100.
[2] Lancet, December 22, 1860, p. 605.
[3] Guy's Hospital Reports for 1850, pp. 8, 9.

ART. IV.—*Cases of Penetrating Wounds of the Chest and Throat, illustrating some important Practical Points.* By JOHN ASHHURST, Jr., M. D., Resident Surgeon to Pennsylvania Hospital.

THERE is perhaps no class of wounds more deceptive in their results than those of the chest. A frightful gash, with the air blowing in and out at every respiration, will sometimes heal in a few days, and without a single bad symptom; while, on the other hand, a small, hardly perceptible puncture, unattended by hemorrhage or other evidence of danger, may in a short time prove the cause of the most serious and even fatal consequences.

In former times very indefinite ideas were entertained by medical men as to the symptoms of chest wounds, and their prognosis. Immediate coughing up of blood was regarded as pathognomonic of wound of the lung; John Bell declares of the instructed surgeon, that "if the patient spits blood, he fears a wound of the lung; if there be an emphysema, he is sure of it;" whereas, in fact, a wound of the lung may be accompanied by no hæmoptysis whatever, and emphysema very frequently exists without any pulmonary lesion. The following case will illustrate this point.

Daniel L——, aged 45 years, was admitted into the Pennsylvania Hospital on the 8th of October, 1861, about quarter past nine o'clock in the evening, with incised wounds of the chest, and of the scalp. The scalp wound, which was between three and four inches long, was situated on the right side of the head, and bled most profusely, the posterior auricular artery of that side being fairly divided; the wound was dressed with gauze and collodion, and the hemorrhage arrested by a compress and firm bandage.

The wound of the chest was upon the left side, about an inch and a half below, and two and a half inches to the left of the nipple. The wound was about an inch and a quarter long, and apparently made by a sharp-pointed instrument.

There was a good deal of emphysema about the wound, spreading up the chest, and around to the back. The air was forcibly drawn in and blown out with a rushing noise at each respiration. There was some evidence of shock; the pulse 78 in the minute, but feeble, and the respiration twenty to the minute. There was much anxiety of breathing.

Here now were three symptoms well marked, any one of which is generally considered diagnostic of lung wound, viz., dyspnœa, emphysema, and tromatopnœa; and yet from the further history of this case it will, I think, appear that the lung was entirely unharmed.

The wound was closed by several points of lead suture, and a compress and bandage placed on it, and not removed until the sixth day. Two hours after admission the patient had reacted; the skin was warmer, and the pulse fuller; the breathing more easy. The respiration on the wounded side was somewhat feeble, but beyond this auscultation and percussion revealed nothing abnormal about his lungs.

Absolute diet and perfect rest were enjoined, and this constituted the treatment.

On the 14th, six days after his admission, the compress was removed, and the wound found healed through nearly all its extent, one or two drachms of pus being discharged from the upper angle. A lime-water dressing was now applied, and the diet changed for one more nutritious than had at first been permitted. No bad symptoms presented themselves, both the dyspnœa and the emphysema having spontaneously disappeared. On the 19th of October he was allowed to get up; the scalp wound was now entirely healed, and of the chest wound, but a point of ulceration remained. He was discharged, cured, on the 28th, the whole treatment having occupied but twenty days.

Now, in this case, the lung certainly could not have been wounded, or the recovery—if recovery had taken place—would have been more tardy. Here was a penetrating wound of the chest, with symptoms such as to cause the most serious apprehensions, and yet in the short space of eleven days the man was walking about, and to all intents perfectly well.

Gunshot wounds of the chest are generally more dangerous than stabs, as they are more likely to affect the deep-seated viscera, yet cases are on record where a ball has passed completely around, subcutaneously, without opening the thoracic cavity. Hennen met with two cases in which the ball passed between the costal pleura and the lung, making one-half the circuit of the chest, and yet not penetrating the lung; and, still more surprising, he mentions a case in which "the ball, which struck about the Pomum Adami, was found lying in the very orifice at which it had entered, having gone completely round the neck, and being prevented from passing out by the elasticity and toughness of the skin which confined it to this circular course."

In the following case of gunshot wound of the lung, such a circular course was at first supposed, and a favourable result was accordingly hoped for; but the autopsy revealed that, in this instance, such a fortunate deflection had not occurred.

Mary A——, aged thirteen, was admitted into the women's surgical ward about seven o'clock in the evening of July 10th, 1861, with a gunshot wound of the chest. While sitting in the yard back of her father's house she was struck by a ball from a toy cannon, fired in the adjacent yard. There was found a compound comminuted fracture of the left clavicle about an inch and a half from its sternal end. The ball was found by the attending surgeon (who happened to be in the house at the time), posteriorly, lodged beneath the trapezius muscle, between the third and fourth ribs. It was immediately removed by a counter opening.

The symptoms of constitutional disturbance were so slight, and the general condition of the patient was so good, that it was supposed that the ball, after striking the clavicle, had been deflected in an upward direction, and, coursing along in a curved line, had found its place beneath the trapezius without wounding the lung. The case was attended by Dr. Goodman, and afterwards by Dr. Livezey, and I did not see it again, except casually.

Symptoms of pleuro-pneumonia showed themselves on the 19th, nine days after admission, and a fatal issue ensued on the morning of the 22d.

An *autopsy* was made six hours after death with the following results. There was a compound comminuted fracture of the left clavicle, with a spicula of bone penetrating the pleural cavity, and entering the apex of the lung, which was adherent at this point. The apex was in a state of congestion, hardly amounting to red hepatization, and, on making an incision, a clot was found in the lung, and the track of the ball well marked. The left pleural cavity was about half full of bloody serum, of which one and a half pints were removed. The lung was compressed against the vertebral column, and the heart pushed to the right side. Both pleural surfaces were covered with lymph. All the other organs which were examined appeared healthy.

In connection with wounds of the lung, I may refer to a case not strictly pertaining to this category, but of sufficient intrinsic interest to authorize my recording it in this place.

Richard F——, aged thirty, was admitted on the 23d of October, 1861, about nine in the morning, with an incised wound of the throat. While labouring under incipient mania-à-potu, the man had, with an ordinary table-knife, inflicted upon himself a most frightful gash. There were two wounds, one small and superficial on the right side of the throat, while the larger, which had an extent of fully five inches, was directly in front. The knife had completely divided the cricoid from the thyroid cartilage, going back to the anterior wall of the pharynx; the superior thyroid artery of the right side was divided, and bled freely; the sterno-cleido-mastoid muscles on either side were exposed, but neither the carotid arteries nor the jugular veins were injured.

The larynx above the cut was filled with clots, and clots and liquid blood mingled with mucus, were frequently coughed up from the trachea; the pulse was feeble, and the skin cold. A silver tube, such as used after the operation for tracheotomy, was introduced, a ligature placed upon the bleeding superior thyroid artery, and the wound closed by points of lead suture. As any effort at swallowing was followed by violent and frightful spasms of coughing, the patient was stimulated by heat to the feet, a sinapism to the abdomen, and enemata of brandy.

Between twelve and one o'clock he appeared moribund, his face covered with a cold sweat, and presenting all the evidences of approaching collapse. Under the treatment, however, he began to improve, and by three o'clock reaction was fully established, and he breathed easily through the tube. The expectoration of clots had also now ceased, and in a few hours more he was able to swallow without difficulty. Stimulation was now suspended, and arrowroot was directed to be given during the night, in quantities of a teaspoonful at a time.

No change was now perceived until about 11½ P. M., when he made an effort to rise in bed, which being prevented by the person in attendance, he was shortly after seized with dyspnœa, and died about ten minutes before midnight.

An *autopsy* was made seven hours after death, at which it was found that the larynx and trachea were perfectly healthy, but the bronchi filled with a frothy mucus, very slightly tinged with red; the lungs were healthy; the liver slightly enlarged and fatty. A microscopic examination

of a portion of the aorta made by my friend Dr. William F. Norris, revealed incipient fatty degeneration in this locality also.

This case affords an exception to the usual rule that wounds of the throat, not involving any large vessels, recover. Here the hemorrhage was entirely from small vessels, most of them so small that they could not be tied, and yet death resulted; not, however, from the hemorrhage, for the parts were found dry at the time of death, and there were no clots in the air-passages, but from the effusion, consequent upon the irritation, which the bleeding immediately following the injury produced.

One of the most frightful-looking wounds I have ever seen, and yet which proved perfectly innocuous, was a penetrating wound of the anterior mediastinal space.

The patient was admitted on the afternoon of Sept. 17th, 1861, with a large incised wound opening this cavity, and attended with considerable hemorrhage, probably from the mediastinal artery. The edges of the wound were brought together with lead wire, a large compress and firm bandage applied, and absolute diet and perfect rest enjoined. With the exception of a slight local pleurisy, not a bad symptom was presented; and the patient left the house well on the ninth day after the injury, the wound having united literally by the first intention.

Wounds of the heart were in old times considered inevitably and instantly fatal. Numerous recorded instances, however, have shown that life may be prolonged almost indefinitely, and that a recovery is far from impossible in wounds which at first appear very unpromising. Ambrose Paré knew that heart wounds were not always immediately fatal. Haller mentions a needle found in the heart of an ox. Fournier gives a case in which a ball was found in the right ventricle of the heart of a soldier, six years after he had received the wound. Chastenet knew a case in which the right ventricle was pierced by a bayonet, and yet life was maintained for fifteen days. Ferrus, quoted by Erichsen, mentions a case in which a man lived twenty days with a skewer traversing the heart from side to side. Nélaton saw a case in which a stab in the heart was not followed by death until the fourth day. Numerous other cases will be found referred to in the No. of this Journal for August, 1829, pp. 307–314.

The following case is of considerable interest, as adding another instance to what must be looked upon more as curiosities of surgical practice, than as furnishing much available instruction for therapeutical improvement.

Charles R——, coloured, was admitted to the North-house ward of the Pennsylvania Hospital on the evening of Friday, May 31, 1861, with an incised wound of the breast on the left side, which bled most profusely. It was dressed in the usual manner with a compress and bandage, the patient confined to bed and placed on an absolute diet. I first saw the case on the subsequent Monday, being the third of June, and the third day after the injury. At this time there was marked dyspnœa, and evidence of effusion into the pleural cavity. On the afternoon of the following day, the patient was much more comfortable. There was hardly any dyspnœa, and the inexperienced observer would certainly have prognosticated a more

favourable condition. At six o'clock the next morning the boy was dead. An autopsy was made nine hours subsequently with these results.

There was an incision on the left side of the breast, in a line with, and two inches below, the nipple. The sixth costal cartilage was divided, and the wound extended into the thorax, penetrating the pericardium and apex of the heart, and opening the left ventricle. There was also a small punctured wound in the base of the upper lobe of the left lung. The surface of the heart and the inner surface of the pericardium were extensively inflamed and thickened. There was also extensive pleurisy of the left side. The pleural cavity contained four and a half pints of bloody serum, and a small quantity of a similar fluid was obtained from the pericardial sac. Both lobes of the left lung were completely collapsed; the right lung was healthy.

From each of the five cases which I have recorded, may be derived some practical suggestions. From the first and fourth cases may be seen the advantage of not prematurely disturbing the original dressings; much harm is, I believe, done in this way. The young surgeon too often, under the delusion that he is manifesting a proper zeal, gratifies a hurtful curiosity to see how the wound looks, by continually renewing and disturbing the dressings, and thus does injury, and not benefit to his patient. In my first case it will be observed the wound, when once dressed, was not uncovered until the *sixth* day, and this I consider to have been the most important point in the treatment.

Another very important lesson which may be drawn from some of these cases, and especially from the last, is not to be deceived by the apparent amelioration of symptoms, which is but too often the immediate precursor of a fatal issue.

A cessation of dyspnœa, it must be remembered, may depend upon very different pathological conditions. It may be, and it is well for the patient when it is, from an absorption of effusion, and consequent disembarrassment of the respiratory motions; but it may also arise from a total collapse of the lung, which then not admitting any air, of course the difficulty of breathing can exist no longer.

A favourable prognosis should, then, never be founded upon the cessation of dyspnœa alone; other symptoms must be taken into account, particularly the signs given by physical exploration of the chest. When these show that all is right within, then and then only are we justified in exciting new hopes in the minds of our patient and his friends. And generally in any wound of a cavity containing so many vital organs as the thorax, in view of the difficulty of diagnosticating what is and what is not injured, the surgeon should be very careful in what he may say as to the prospects of the case. To be either too sanguine or too desponding, is a fault in the physician, and not unfrequently reacts most unfavourably on his patient.

In conclusion, the treatment in these cases should partake largely of the expectant character; and I think we owe much to Dr. Fraser for his excellent chapter on this subject. The barbarous mode of treatment by large

and continual bleedings may now be laid aside, and we shall no longer run the risk of what Marshall Hall quaintly calls "relieving the symptoms of reaction."

Quiet, rest, and low diet—these are the principal points to be attended to, when reaction (which should as much as possible be brought about by external stimulation) has fairly taken place. No routine treatment can be recommended beyond the hygienic measures above suggested; everything else must be adapted to the immediate exigencies of the occasion.

ART. V.—*Brief Account of Dysentery as it occurred at Fort Jefferson, Tortugas, Florida.* By J. F. HAMMOND, M. D., Surgeon U. S. A.

Dysentery, as it occurs here, is simple, sthenic. It commences with loss of appetite, constipation, pains in the abdomen, and frequent calls to stool without passing anything. This is succeeded by diarrhœa, which is followed by frequent discharges of light-coloured viscid mucus, or blood, accompanied by severe tenesmus, some excitation of the pulse, anorexia, absence of thirst, and general suppression of the secretions.

Heat is an important element among the causes of this disease.

The experiments of Vierordt show that not only the number and depth of the respirations decrease with the increase of the temperature, and thus indirectly lessen the absolute quantity of carbonic acid given off by the lungs, but, also, that the percentage amount of it is diminished. From which it may be inferred that high temperature influences the excretion of carbonic acid by the lungs in some other way than by diminishing the mechanical functions of respiration. Numerous observers have shown that carbonic acid and nitrogen and certain peculiar volatile matters, the retention of which by suppression might give rise to various morbid conditions, are exhaled by the skin. Lehmann says that less of the gases is exhaled by the skin when the perspiration is active. And it is known that the formation of bile is suspended by the exhaustive influences of high atmospheric temperature.

Retention, in the blood, of deleterious secretions, may destroy the vitality of its fibrin. Whilst cytogenesis, the organic properties of simple membrane, the functions of the cells, and the metamorphosis and repair of the molecules of the tissues are impaired by an undue accumulation of carbonic acid, and the absence of oxygen.

No matter where dysentery may be thought to originate, there is no doubt that anatomical derangement of the fluids, or of the solids, will sooner or later be accompanied by disturbance in the nervous system. The

medium of the mobility of the organic forces, and by whose operation are exercised all the functions of the body, the nervous system derives its power from the development of cells. Influenced as readily as are any of the other cytological elements of the vital stimuli, wherever modifications in the latter cause perverted action in the one, they may also in the other. The manifestations of such an action varying according to the functions of the part affected. Atmospheric heat may cause irregular action in nerve power, even exhaust it for a time. So will malaria, and so will a vitiated pabulum. Its due action requires the blood to be depurated of its useless carbonic acid, and of other suppressed excretions and secretions and products of the decomposition of the body—to be in a state of extreme purity. Indeed, no action can take place in it without a supply of oxygenated blood. Though the organic actions are not *dependent* upon nervous agency, yet the nervous system is concerned in providing the conditions under which the functions of the contractile tissues are performed, has a direct operation in the changes constituting the functions of nutrition, secretion, &c. And the nerve force, itself generated by cell development, is in turn able to modify other principles of cell development. Hence derangements in the excretions and secretions, in this disease, are essentially connected with perverted nervous action, and tenesmus is due to reflex action.

Some pathologists maintain that the sole cause of the motion of the blood in the capillaries of the lungs is the respiration. The want of aëration retards the circulation in those capillaries. Carbonic acid is a narcotic. It may be retained in the blood by the action of atmospheric heat, independently of the diminution, by the latter, of the mechanical functions of respiration. It may act on the general system through the medium of the nerves, by being first introduced into the circulation of the blood. Thus, it may influence the functions of respiration and the pulse, and the mechanical functions of all the tissues, impeding the general circulation. Organic force is consumed and may be exhausted by exercise of the functions, general or local. Prolonged profuse secretion by the skin, from the action of high atmospheric temperature, is followed by prolonged suspension of that secretion. The sympathy between the skin and liver is such, that the secretions of the latter follow all the fluctuations of the secretions of the former; they are the increasing functions of each other. The suspension of a secretion implies torpor of the circulation in the capillaries of the organ from which it is due. The circulation through the portal vein, even in health, is more torpid than in any other part of the body, from the friction of the second capillary system through which it passes, in the liver, and from the absence of valves in the branches into which the portal vein discharges itself. Retention in the blood of the elements of the bile will obstruct the liver, causing hyperæmia. Thus, *à priori*, there must necessarily be congestion of the capillaries of the mu-

cous membrane of the chylopoietic viscera in dysentery under the circumstances in which it is found here.

The *diet* is, doubtless, a material cause of the disease here. The ration is well proportioned with reference to the bases of the metamorphosis of animal matter, and to the quantity, also, were it designed for use in a cold climate only. The proportion of the four groups of nutritious substances approximates that in human milk, but thirty-five ounces of dry nutritious matter is too much in latitude 24°. The ration in the English Navy allows about that quantity per diem for each man; but when little bodily exercise is required, and where there is less exposure to low temperature, it is considerably reduced in amount. In the work-houses in Scotland, where the inmates lead a comparatively inactive life, the allowance of dry nutriment is thirteen ounces of vegetable and four ounces of animal matter. And the diet-scales for paupers, in use in different parts of England, gives to each person daily eighteen ounces of dry nutriment, and they are found to work well; that is in latitude 53° and 56°. Varying requirements of the body from the effects of the different influences of the external world, changes in the condition of the organism from the varying activity of its functions, demand varieties in the composition and quantity of the food. Fat is the most objectionable element of the diet. It is not needed here for calorific purposes. Only a small quantity is required in the stomach, for digestive purposes; more than that impedes digestion by encasing each individual particle of food, rendering it proof against the digestive juices, and becomes rancid, forming volatile acids which may have a very deleterious action. Absorbed through the lacteals, it further embarrasses the liver, in this climate, and accumulating unduly in the blood it vitiates it. For all histological purposes a sufficient supply of it may be derived from the oils and *carbo-hydrates* of a purely vegetable diet. The general experience of the inhabitants of warm climates, is in favour of a diet chiefly or entirely vegetable, and a better change could not be made there than to assimilate it to that, by the substitution of fruits and farinacea for the oleaginous articles.

The *clothing* is too warm. It oppresses by its weight, and debilitates and predisposes to the disease by increasing the secretions from the skin and liver. A frockcoat and trousers of dark-blue cloth, over a thick flannel shirt and heavy cotton drawers, and coarse wool socks, weighing altogether six pounds and a half, is not suitable for this latitude, where the thermometer, during at least nine months of the year, ranges from 80° to 88° F. Light-blue flannel overclothes and thin cotton underclothes, weighing half as much, might be substituted with great advantage to the health and the comfort of the men. The Spanish soldiers at Havana are clad with linen pantaloons and jackets, and straw hats.

The exciting causes of the disease are discharges of acrid bile into the

intestine, illy digested food, and diet in a state of partial decomposition. all of which are incident to a tropical climate.

The indications for the treatment are, to induce a normal condition of the congested vessels of the chylopoietic viscera and liver, to restore the equilibrium of the circulation, and the integrity of the vital force, to heal the bowels, and to institute a system of hygiene to prevent the recurrence of the disease. To effect these objects the skin is kept thoroughly cleansed, the secretions generally are excited, the contents of the bowels are discharged, local lesions are remedied, and soothing and nutritious diet and proper exercise employed.

The patient is first well washed in a sea bath. Then he takes an emetic of ipecacuanha. When the vomiting has ceased, he is given a scruple of calomel, and eight hours after the latter, half an ounce of castor oil is administered. Should he, in the meantime, desire to eat, he is allowed boiled arrowroot, and if thirsty he drinks a mucilage. At the end of the first twenty-four hours he is in every way improved. The treatment the second day is commenced with a general cold bath. Hope's mixture is then given, or mist. camphoræ ℥ivss; liq. ammo. acet. ℥iij; spts. æther. nit. ʒiij; potass. nit. ϑij; syrupi limonis ʒij. Fiat mist. cujus capiat cochlearia ij ⟨larga, quarta quaque hora⟩ which is continued until the stools are feculent, or are changed from mucous to serous. This requires from twenty-four to forty-eight hours. Then, ℞. Cretæ præp. ℥j; saponis, pulv. rhei, āā ʒj; hydrarg. cum creta ϑij; olei anis. gtt. v; sacch. alb. ℥ss; tere bene simul. Capiat ʒss ad ʒj ter die. The general cold bath daily, and the arrowroot and mucilage are continued throughout the active treatment of the disease, and care is taken that the patient is not exposed to a current of air.

If there is tenesmus after the first twenty-four hours from the commencement of the treatment, an enema of tinct. opii gtt. xxv, in mucilage f℥j, is given and repeated every hour until it is relieved. Should there be tenderness on pressure in any part of the abdomen, cups, scarifying, are applied on the part, and repeated if necessary. If the case is prolonged without tenderness, the abdomen is covered with dry cups daily, or by a mustard cataplasm of ground mustard and water applied next to the skin for forty-five minutes, once or twice daily. If the case is obstinate and there is much tenesmus, an enema of four grains of nitrate of silver in two ounces of mucilage, increased to four grains to the ounce, is given daily.

As the patient convalesces he gradually resumes full diet, but is restricted from tea and coffee. And when he is returned to duty he is instructed to continue the general cold bath daily, to abstain from tea, coffee, and *all* drinks containing alcohol; from fat meat of every kind; to keep as much as possible out of the sun; to guard against being stationary in a current of air; and to walk at least three miles each day. It is very rarely that the gums are touched from this treatment, the recurrence of the disease in

the same person is very unusual, and the average duration of each case is less than four days (3.77 days).

Month.	Ratio per 1000 of mean strength.		Total Diseases.	Total Dysentery.	Deaths.	Thermometer: Monthly mean.	Prevailing winds.
	All diseases.	Dysentery.					
June	454	101	94	21		84.55	N. E.
July	515	157	134	41		86.23	N. E.
August	355	84	101	24		83.77	N. E.
September	126	32	72	18		83.37	N. E., E.

FORT JEFFERSON, TORTUGAS, FLORIDA, 5th October, 1861.

ART. VI.—*On the "Æsthetics of Suicide."* By S. H. DICKSON, M. D., Prof. of the Practice of Medicine in Jefferson Medical College, Philadelphia.

IN the October number of *Winslow's Psychological Journal* appears an article with the above title—"The Æsthetics of Suicide," probably from the pen of the distinguished editor, an admitted authority upon this class of subjects. Ingeniously written, it is nevertheless unjust and injurious in its pervading suggestion of a relationship assumed to exist between the suicidal disposition in the mind, and a moral degeneracy in the character. This assumption I believe to be entirely unfounded.

The motives which induce to self-destruction, on the other hand, are often natural enough, even if weak and inconclusive; they are rarely vicious in themselves or depraved. It is the result, like all other forbidden and criminal acts, of undue emotion, of ungoverned passion. We do not always shrink from avowing our pity for the unhappy wretch who has committed the greatest atrocity; nay, we can sometimes so far enter into his feelings, his condition, his temptations, as to indulge a shuddering sympathy with him, which, while it does not excuse or defend him, palliates in a degree his apparent guilt. In the truly humane phrase of Burns—

> "What's done, we partly may compute,
> But know not what's resisted."

So, if we can detect or apprehend the course of thought, the current of oppressive infliction which have led the miserable suicide to his desperate act, we shall not fail, in numerous instances, to find reason for a mitigation of the harshness with which it is natural and perhaps proper to denounce the dreadful deed.

Among the infinitely varied forms of insanity, not the least common, surely, is the incapacity to estimate fairly and justly the true weight of

motive; and indeed this condition of mind seems to be the almost uniform precursor of suicide. Sentiments akin to virtue may, when exaggerated or distorted, betray us occasionally and lead us astray, as well as our vicious propensities. The histories of suicide afford us abundant examples in illustration of these views; the wonderful inconsistency of some, the strange fatuity of others, and in others still a mistaken purpose not altogether evil, are alike worthy of record. Thus we read in a Scotch journal of "a compositor on the *Iron Times* newspaper, who drowned himself last week because he could not perform a piece of tabular work satisfactorily." We are also told of "a ploughman at Shropland Hall, Essex, who cut his throat while at the plough because he could not run the furrow as straight as he wished." And in contradiction of the familiar but absurd notion that "he who does not fear death knows no other fear," we recall the case of the patient at St. Bartholomew's Hospital, who, in dread of the impending amputation of his leg, almost cut his head off with a razor, dying nearly instantaneously. Each one selects his own preferred method, seeming to shrink from any other, and even avoiding, with inconceivable fastidiousness, slight and trifling inconveniences or unaccustomed annoyances, in carrying out his stern purpose. Women rarely resort to gunpowder; men often. Yet Larrey declares that even these "suicidal maniacs scarcely ever renew the defeated attempt to kill themselves by fire-arms." Brierre also advances it "if not as an absolute, yet as a very general rule, that "individuals who have once endeavoured to shoot themselves will not repeat the attempt. Persons, on the other hand, frequently recur to the various other means which they have before uselessly employed." My note-book furnishes a case strongly in point:—

A German was found one afternoon suspended among the branches of a fig-tree on a vacant lot of one of our Southern cities. He was hanging, with his throat also cut inconsistently, breathing through the severed trachea, the vessels on each side of which were unhurt by his knife. Being taken down and carried to the hospital he recovered readily. This we were told was his fourth abortive attempt to get rid of his life; but about three months after he was more successful; making a fifth experiment he at last cut his throat effectually.

One of the earliest suicides coming within my personal notice was that of a gentleman universally esteemed and of irreproachable character who involved himself inextricably in debt by indorsing for a friend. As soon as he found that by the insolvency of his principal he was destined to pecuniary ruin, he filled his pockets with heavy weights, and contrived to fall—accidentally—into the water and drown himself. His body was recovered, and from some papers on his person it was ascertained that he committed the act in full persuasion that thus he became absolved from the obligation, and that his family would retain his property. Was this an act of heroic self-sacrifice, or of irresponsible lunacy, or a mortal sin?

A house-servant of my nearest neighbour was cursed with an unfaithful wife, and laughed at as a cuckold. Being detained very late one night by his master, he found, on reaching home, a rival with her, whom he attempted

to drive away; but being the weaker party he was defeated and beaten. Telling this to his fellow-servants next morning, he was bitterly taunted and ridiculed. Suddenly rising from his seat he ran up stairs declaring that he "would put an end to it." The report of a pistol being heard, he was quickly followed and found quite dead. I saw him immediately after, lying on his back upon the floor, with the left side of the thorax exposed and widely dilacerated. The skin was burnt for some inches around the open wound and his clothing scorched. The cavity was full of clotted blood and the heart seemed to have been torn to pieces by the explosion of the loaded weapon, a large horseman's pistol, which he had pressed firmly against his breast and fired. It had been fully charged with powder only and simply wadded; for there was no ball in the chest, nor any wound or perforation in the back or shoulder. Our condemnation of this poor wretch must surely be largely diluted with pity, and mingled with commiseration for his mental and bodily imbecility.

In the winter of 18— I had under my care a Mr. T——, a very handsome and agreeable young gentleman, a confidential clerk in a very large mercantile house. He was very much esteemed, and was on the point of being received as a partner in the firm, one of the most prosperous in our country. He was under engagement to be married to a lady residing at some distance. His character and habits were good; but in some unguarded frolic he had fallen—for the only time—into an imprudence that had rendered it necessary to postpone his wedding. He wrote sadly to announce this unhappy necessity, and the affair preyed heavily on his mind, producing a deep melancholy, increased doubtless by the solitude to which he was condemned; for it was the season of most active business, and his friends were all occupied day and night, leaving him alone in his chamber. On the very day on which he was to have been married, he received a letter in reply from his betrothed, which he showed me, weeping profusely. It was charmingly written, full of the fondest tenderness; expressive of anxious regret for his ill health, and soothing him with the most gentle and caressing sympathy. This was too much for one already overwhelmed with a profound sense of shame and unworthiness. Next morning when I called to see him he was not to be found; he had left his apartment to return no more. A day or two afterwards a negro fisherman living on one of the neighbouring sea islands brought to the city a coat and hat which he had picked up upon the beach. He had seen a gentleman take them off and lay them down upon the sand and walk directly off through the surf and breakers into the deep water. It was a cold day in February and stormy, and he was too far off to hear or to be heard or in any way to interfere. In the pockets of the coat were found Mr. T.'s handkerchief and the letter above mentioned.

Surely in the depth of this remorse we shall discover some ground for a qualified consideration.

"A wounded spirit who can bear?"

What wonder that the oppressed intelligence gave way under such a burden of pain and despair!

A sudden impulse, concurring with accident of opportunity, has not seldom determined the commission of suicide in the suffering and dejected.

One among my friends highly valued and of most estimable qualities, laboured under dyspepsia attended with much depression of spirits, and

recently, as was supposed, though not clearly made out, some religious melancholy. After three or four days of somewhat deeper gloom than usual, he apparently recovered his cheerfulness, and dined with a small party of young men whom his son had invited. Nothing in his manner or conversation struck any of them as particular; but he left them early after dinner pleading headache as an excuse and went up stairs to lie down. He had to pass the door of his son's chamber, and turning into it sat upon the bed. Unfortunately, a loaded gun—the party had just returned from hunting—had been leaned against the head of the bed, and it is conjectured attracted his attention. Taking off the boot from his right foot and placing the muzzle of the piece in his mouth, he touched the trigger with his toe, and blew off the top of his head, dying instantly. All this occupied an indefinitely short interval, so that the report of the noise of his fall forward on the floor, seemed immediately to follow the sound of his footstep ascending the stair.

It is not imagined that he intended to go into that chamber, nor that he expected to find a weapon there ready for use; a most rare contingency, the result of the young man's hurry to attend upon his guests. How much there is in this history to regret; how little it savours of criminal purpose or evil intent, need not be pointed out. And thus died Romilly and many other good men.

We meet now and then with suicides occasioned by an almost inconceivable exaggeration of matters affecting the special sensitiveness or fastidiousness, so to speak, of the individual.

A remarkable example of this sort presented itself in a gentleman holding a very responsible place under Government and employing numerous subordinates. He was a man of the loftiest and most delicate sentiment; the most unsullied honour; jealous and proud; distinguished in every way; well born, well educated and refined in manner; courteous to all, but exacting in return all courtesy and deference. On making one of his regular official statements of accounts, he was formally notified that he had overpaid two of his officers to a large amount which he would be required to refund. He replied promptly to this demand by sending to the proper department a check for the whole sum, and then informed these persons of what he had done, apparently expecting as prompt restitution at their hands. They demurred, however, and gave him to understand that they would set up and defend their claim against the Government for the entire arrear. It may be mentioned here that this was done successfully; the justice of his original settlement with them being established in due course of law. But this he did not survive to know. He conceived the idea, most unfortunately, that his integrity and uprightness in the transaction were impugned; in fact he did incur some blame among idle talkers for alleged carelessness or favouritism in the advance at first, and for undue haste in meeting the demand for restitution afterwards: but not even his worst enemy—if he had an enemy—attributed or could have suggested the slightest suspicion of personal interest or wrong or disreputable motive in the affair. Yet this vague shadow of a cloud upon a life hitherto above all censure and now advanced beyond middle age was totally unendurable, and after a few days of sullen melancholy, oppressed him to self-destruction. There never lived a man who would have been thought less likely to be driven to such

despair; wise to counsel others, sagacious in the conduct of his own affairs; prudent in his habitual method of living, he was worthy of all reliance and trust. When he was found sitting comatose on the floor of one of the unoccupied rooms in his princely mansion, no thought of suicide came into the minds of his friends or of the physicians who were first called to him, and he was treated as for an apoplectic seizure. I saw him some hours later, in profound stupor and entirely insensible. The effort to effect the introduction of medicine into his stomach being earnestly repeated, my finger introduced into his fauces encountered a piece of opium, softened but not chewed, arrested there doubtless by the supervention of narcotism while he was endeavouring to swallow it. He had taken several such, in all probability, and one or two were afterwards found on the floor, near the spot where he was sitting when sought for. The assiduous use of the stomach pump, by which were brought up gallons of water thrown in to dissolve the opium taken, protracted his life for a whole day; during which he muttered from time to time phrases indicative of irritated sensibility, and a most intensified horror of criticism and calumny.

In this case the act was clearly premeditated and deliberately resolved on; yet there was nothing in his language or manner calculated to give the least warning to those about him. He dined on that day with his family as usual, and seemed perhaps rather more cheerful than for some time previous. In the mental chaos of shattered reason, of disordered apprehension, of exquisitely tortured pride, and mortified self-respect, there is no place left for imputation of moral delinquency, no ground for just reprobation. We deplore, we pity, we lament his fate rather than condemn him. He died a victim to a nice and delicate sentiment of honour, dreading a stain far more than a wound; a morbidly exaggerated pride of position and character. Such men—such feelings are but too rare; and society in its best development will reluctantly allow his memory to be attainted with reproach.

Mr. H——, from Massachusetts, was found dead on his bed one morning just after breakfast at his hotel. He had made a loop in his handkerchief, and had fastened it to the head-post. He lay leaning over the side with his arms folded under him. I was satisfied that his position required him to press heavily forward and downward in order that he might strangle himself, and that he could have relieved himself easily at any moment of repentance or irresolution previous to utter unconsciousness. It will be recollected that a similar posture and condition of things gave rise to much discussion in the case of the last of the Condés, the Duke of Bourbon, as to the probability of his body having been suspended *after* strangulation by the hands of a murderer. (Vide *Dix Ans*, par Louis Blanc.)

Mr. H. had breakfasted at the common table, and his extreme paleness had been subject of remark among his fellow-boarders. On inspecting his body I found the brachial artery of each arm cut into at the bend of the elbow, as if with a pen-knife; and an examination of the premises showed large masses of coagulated blood on a shed beneath his window, proving that he had attempted in vain that mode of self-destruction.

His motive for the deed was obvious enough. As a junior partner in a Northern firm, he had brought with him to a Southern city a large ad-

venture of merchandise, on which he had incurred a heavy loss. His elder brother was daily expected to come on and take charge of the affair, and he had not courage to face the anticipated frowns and upbraiding.

When Mr. W. B—— came into possession of his plantation in one of our Southern States, "the driver" on the place was Old Stephen. He was a consequential little fellow, much trusted and indeed altogether trustworthy, but somewhat testy and petulant. As he advanced in years his temper grew worse and worse, and he used the whip upon "the people" under his charge more and more freely. They bore with him however good-naturedly enough, the elder ones turning him often from his purposes of severity by remonstrance, persuasion and entreaty, the younger folks by getting out of his way and evading him until he forgot their offences; all submitting the more patiently, because, though rather harsh, he was of unquestionable impartiality—he had no favourites. His increasing infirmities, however, at last brought about his deposition, and instead of overseeing his fellows, he was mounted on a marsh tackey and made cattle-minder. But this horse-back exercise did not compensate him for his lost authority, and in order to awaken pleasant reminiscences of the past and keep his whip in use, he took to flogging his wife—as many of paler complexions and higher race have done before and since his time. Di was a tall, portly, well-made woman, much younger than he, who had accepted in honourable wedlock the hand of this little wizened senior, only that she might enjoy the privileges and dignity of "driver's wife," and was of course deeply chagrined and mortified at his fall. Habitual subserviency kept her for awhile submissive under his ill treatment, but the evil became intolerable, and she complained to her master. Being much struck with the obvious difference in physical power between the ill-matched pair, he said jestingly to her: "Why do you not defend yourself? You are the strongest of the two. When he attacks you again, take his whip from him, and if he will not keep quiet, give it to him soundly." He soon left the plantation and returned to town, thinking no more of the matter. But about a week afterwards the household was astonished by the sudden apparition of Old Stephen. He was dressed in his wife's garments, and scuttled along the piazza holding up her petticoats, a foot or more too long for him, with her handkerchief twisted jauntily about his head. He had entered the yard on his little pony, and it appeared had ridden, if not the whole way, at least from his entrance into the city, sitting sidewise with his leg affectedly thrown over the pommel of the saddle like a woman. He was perfectly sober, and there was a gentle expression of sadness almost amounting to melancholy upon his wrinkled visage. When he told his story, which he did with the utmost gravity, convulsions of laughter shook his little circle of hearers, of whom I happened to be one, which we afterwards remembered with some touch of remorse. "He had corrected his wife," he said, "for some domestic misdemeanour, and she, obeying his master's suggestion, had wrested his whip from him, thrown and held him down with superior strength and in the fray had actually struck him. Having been thus overpowered by a woman, he found himself unworthy the name and garb of a man, and had therefore come down to ask for women's clothes and women's work—to surrender his horse and to give up his masculine office of tending cattle." So speaking, unmoved by the shouts of his hearers, he stood calmly and firmly awaiting the reply of his master. But he was evidently entirely unprepared for the contempt with which he was answered, and unspeakably mortified

by the peremptory order to dress himself properly, and return to his duties. He obeyed without a word, however, and a jacket and pair of breeches being provided for him—his own he had left expressly for his wife's wearing—he mounted his rough little steed and went his way, quite chap-fallen, carrying the gown and petticoats which he had doffed, tied up in the handkerchief which had been wrapped about his head. Arriving at home at nightfall, he put up his horse and took his station sullenly in the chimney corner of his own cabin, where he sat through many long hours.

Next morning early, the dairy-woman, when she went to "the pen" to milk her cows, became aware of something swinging among the branches of the mossy live-oak above her head. It was Old Stephen himself, hanging from one of the rugged boughs, in the same costume which he had worn on his memorable journey to town. With the long lash of his whip he had formed the fatal noose; he had on his head Di's handkerchief twisted creole-fashion, and her cotton petticoat and blue gown dangled far below the ends of his toes.

Thus terminated the career of Old Stephen, a spirit more unconquerable than that of Napoleon the Great. His name should have been Cato or Brutus: his soul, if not his complexion, was Roman. Ah! how little, when we drove him from among us with taunts and scorn, did we anticipate the tragical end of this singular and most unheard of comedy.

My object in offering these brief remarks and reciting these few instances of suicide, to which I might have added many others illustrative of the same purport, has been to show that this fearful act, however deeply to be deplored, however earnestly to be reprobated and forbidden, is not necessarily the result of any moral degeneracy, nor essentially associated with any imputation of vice or crime; but that on the one hand its perpetrator may be impelled by irresistible and morbid force of passion, and therefore irresponsible as are all lunatics, or on the other, led forward by an intensified sentiment of mistaken duty or obligation, deserving of our pity and sympathy rather than of unqualified condemnation and censure.

I cannot deny myself the satisfaction of presenting this consolatory view of the matter, sincerely as I entertain it, to those who have suffered the loss of friends by voluntary deaths, and who have been overwhelmed at finding them regarded even by some among scientific philanthropists as criminal rather than unfortunate and beyond endurance unhappy.

ART. VII.—*On the Nature of Phthisis Pulmonalis, and especially of its First or Pre-Tubercular Stage.* By EDWARD SMITH, M. D., LL. D., L. R. C. P.; Assistant Physician to the Hospital for Consumption and Diseases of the Chest, Brompton; Corresponding Member of the Natural History Society of Montreal, &c.

WHATEVER may be the disadvantages of hospitals devoted to the treatment of a single class of diseases, it must be admitted that they offer the best opportunity for inquiries of a scientific character in relation to those diseases, both by the numbers of such cases brought together at one time and by the concentratedness of attention which an earnest inquirer is led to devote to the subject. Those who have had the good fortune to prosecute a part of their medical studies in France must cherish the remembrance of the facilities for study afforded by the special wards of Louis when at the Hôpital Beaujon, the Clinique d'Accouchement, the Hôpital St. Louis, the Hôpital du Midi, the Bicêtre, and the Hôpital des Enfants malades; and, after a lengthened period, will still revert to them with great readiness and pleasure. I think it an advancing, and not a retrograding spirit, which of late years has caused the establishment in London of various institutions for the treatment of special classes of affections; for, whilst it must be admitted that in such institutions, wisely conducted, particular diseases may be treated as well as it is possible for them to be in other and general institutions, in progress of time it will be found that those special institutions will have led to a better acquaintance with such diseases. Whilst, therefore, I would admit that it is possible to carry the limitation to an unwise extent, I am of opinion that the profession should encourage those which are wisely established and conducted, and that pupils would find it to their advantage, in subsequent practice, to have devoted some small share of their attention to the practice of special hospitals.

Having, at the Hospital for Consumption and Diseases of the Chest, at Brompton, the greatest possible opportunity for the study of chest affections, and particularly of phthisis, I have recently engaged in several series of inquiries as to the nature and treatment of the latter disease; and the conviction has arisen in my own mind, that if we would successfully combat it, it must be in the pre-tubercular state, and that it is possible to determine with sufficient precision the disease at this early period. The belief in the futility of all our efforts in this disease, and therefore of all hospitals devoted to its treatment, is based upon experience derived from treatment at an advanced stage, and from the belief, common as I conceive, that the tubercle is both the essence and commonly the earliest recognizable indication of the affection. If we still remain of this opinion as to the nature and stage of the disease, I do not see how any greater success in our prac-

tice can be looked for; but if, on the other hand, there is a recognizable anterior condition—one in which no marked deposit has as yet appeared—then, certainly, we may have sanguine hopes both of preventing and of arresting the disease.

This, then, appears to me to be a subject of the greatest possible importance, and one upon which all our improvements must be based.

The opinion as to the nature of phthisis, which has prevailed for some years, is that it is a blood disease—a disease not merely accompanied, or even preceded by an abnormal condition of the blood; but one originating in, and essentially due to the disease of the blood. Hence, it is regarded as a general disease of the system, with a local manifestation in the lungs, and as allied with scrofulous diseases in which a deposit like to tubercle is also met with. The frequency with which tubercle is said to be found in various parts of the body at the same time, and with which the disease appears in members of the same family, or in the children of consumptive parents, are regarded as circumstances corroborating this view of its blood origin. In explaining the nature of this supposed change in the blood, it is not affirmed that tubercle is met with in that fluid; but the fault is ascribed to what Rokitansky—in a former, but not in the last edition of his work—termed a fibrin crasis, in which the change may be in quantity or quality, but not in either universally.

In combating this theory, I shall not weaken my opposition if I admit that, in some instances, the blood was probably changed from a state of health at the very commencement of phthisis; for my objection to the theory is, that its advocates have fallen into the common error of affirming that to be true of the whole which is true of a part. No one would deny that the state of the blood cannot be the same precisely in two individuals, or in the same individual at every hour of the day, or in succeeding weeks or years, when it is remembered the source from which the blood is derived, its intermittent supply and varying character, as well as the frequent variations in the vital powers of the system. But surely much more than this ought to be required before the blood is thus said to be in a state of disease, and one, moreover, which can induce a special disease in the system locally or generally. To prove the existence of the disease in the blood, and its connection with the local disease, it is certainly needful that elements common and peculiar to the two should be found in it, or at least that by inoculation or some other mode of communication, the diseased blood can originate in other systems the disease said to arise from it. Otherwise it is an unsustained assertion, a mere guess, a mode of reasoning which would not be admitted for a moment in any system of reasoning. Now in this case the tubercle is not found in the blood, the disease is not communicable by inoculation or infection. As to its transmission from parent to child, that must result from the solids as well as the humours, and therefore is not the communication of definite elements, but a state of the whole system which

is inordinately prone to the production of the disease. Moreover—and this I think would be fatal to the theory—in a very large proportion of cases the disease has attacked so insidiously that the period of its origin cannot be determined from any state of the health then existing which differed from the ordinary health of the individual. To call that state of the system a state of general disease in which the general health is unchanged, is an absurdity, as it would be also to presume either that the precise elements of disease had existed in the blood during years of health, or that they had suddenly arisen without any cognizable cause otherwise than local, and were then incapable of demonstration. The most that can be affirmed is, that in these cases of supposed blood disease the whole system, both solids and fluids, was inordinately predisposed to the attack of phthisis.

Neither would it weaken my argument if I admitted that, during the disease, the blood may be or even is changed from a state of health; for that would only be valid to the extent of admitting a co-ordinate or a resultant condition. It might show one of the qualities or powers of the disease, but it could not show its essential value; for, by the proposition, the disease had originated before the diseased state of the blood occurred. My objection, here, is that the advocates of the theory have erred in affirming the nature of a thing from its consequence, or possibly only from its coincidence.

The observations of Rokitansky fall under this head; for, in his remarks upon the fibrin crasis of tubercle, he refers only to the state of the blood in the disease; and although he has now withdrawn them, it cannot be supposed that the opinion of one who, for some years, has exerted no inconsiderable influence over our schools and literature, can be so readily forgotten. Hence it may be profitable to see on what unsubstantial grounds he based an argument which has influenced the whole profession. It is worthy of note how indefinite he is compelled to make his opinions, as though he felt that a fallacy was involved somewhere. He says, at the onset: "Although there are, no doubt, tuberculoses purely local." And again: "The latter (meaning the tuberculous dyscrasis) is, for the *most* part, developed out of a fibrin-crasis." Thus he offers two limitations at the outset, beyond which his theory does not apply. He then continues: "In the dead subject, a hyperinosis of the blood may not be ostensible. Nay! owing to the frequent and voluminous processes of exudation attendant upon the course of a tuberculosis, a poverty in fibrin is, perhaps, more likely to reveal itself after death. Excess of fibrin has, however, been demonstrated in such cases by the chemical action of blood withdrawn during life, and it may also be inferred from the extent of tuberculous deposition. *Still the hyperinosis is far from being adequate* to account for the disease. It is the qualitative anomalies of the fibrin that must determine its tuberculous nature—anomalies of quite a peculiar kind, which we shall see may modify every one of the fibrin-crases referred to into the tuberculous."

Thus, having excluded an indefinite number of cases from the influence of fibrin crasis, he admits that the remainder may have either an excess or a deficiency in quantity, and that quantity is far from being adequate to account for the disease. As the nature of a thing must be determined from properties which are universal to it, it follows that, in Rokitansky's showing, the whole value of his argument rests upon the proof which he can adduce as to the quality of the fibrin; for he again says: "Still these said crases by no means serve to throw much light upon the nature of tuberculosis." Then how does he prove the peculiarities in the fibrin which are to give rise to the tubercle? Strange as the answer may be, he takes the characters which he says are exhibited by tubercle, and then simply affirms that they are the peculiarities of the fibrin crasis. Such are the surpassing proneness to deposition and its high grade of coagulability; and in reference to these he gives the following remarkable passage: "The granulation of tuberculous products of inflammation upon serous membranes might indeed be ascribed to a separation of the tuberculous portion due to its coagulability. Still, the very localization of the tubercle crasis in such minute and sharply defined area, that little granule-shaped exudates are the result, constitutes a peculiarity—a remarkable peculiarity—seeing that the same form of separation—the same form of tuberculization—attaches to the fibrin of hemorrhage and to endogenous vascular coagula."

I shall presently refer to an opinion on the origin of tubercle which would have afforded an explanation of the peculiarity now referred to, far more rationally than that now offered; but, for the moment, I content myself with simply asking you to note the multitude of limitations and doubts which he has himself expressed, and to say if truth need be hedged about in this manner.

But upon the broad fact that there is any change in the chemical qualities of the blood, even in (much less at the origin of) the disease, I quote the authority of Lehmann, who distinctly affirms that he could not discover any characters in the blood peculiar to phthisis, but only such as resulted from attendant circumstances, as excess of fibrin during the complication of inflammation, and of water during that of sweating. No doubt changes must occur in the blood during the progress of so exhausting and chronic a disease as phthisis, but they do not in any way affect the question of the origin and the nature of the disease.

But, notwithstanding the preceding remarks, I fully believe that a defective constitution of body (which, I presume, is really all that is commonly meant by the term blood disease) is a frequent cause of phthisis, and as such is directly associated with whatever other conditions will directly or indirectly tend to exhaust the system. Of the two allegations, viz., that as the disease is universal it must arise either from one cause universally existing and acting with something approaching to an equal degree of intensity in all known conditions; or that it arises from many causes, all acting in

the human frame in one common way: I unhesitatingly adhere to the latter. The multitude of causes are well known, and accord with universal belief, and the one common mode of attack is, in my opinion, a diminution in the inspiratory action of the air-cells of the lung.

The short limits of a paper do not permit me to enter into this subject fully, and, therefore, I would give my reasons for this belief in the most summary way possible.

If the disease arise from general causes it must be sought for in one of the two great functions of alimentation and respiration taken in their widest sense.

In reference to the former, I have proved by an inquiry at the Hospital for Consumption, &c., and partly published in the *British and Foreign Medico-Chirurgical Review*, for April, 1856, that in the early stages of phthisis the quantity of food taken is equal to that in health, and that it is properly digested. I have also shown that if the excretions, the feces, and the solids in the urine are not greater than in health, that the excretions by the liver and skin in the early stage are probably not greater than in health, and that the sputa is the only external source of waste which at that period can be seized upon. If such be so in the early stages of the disease, *a fortiori*, they would be so at the period of origin of the disease, and hence I infer that the general cause does not lie in the want of food and in the process of digestion.

The following table contains the results of this extensive inquiry, and offers some points worthy of attention:—

TABLE IN OUNCES AVOIRDUPOIS. JUNE.

Showing the Daily Averages of the Ingesta, Egesta, Pulsation and Respiration in Fourteen Male Cases of Phthisis, at the Hospital, derived from Observations made Twice a Day for a Month.

Hospital Nos.	69	95	107	88	79	75	46	80	51	90	58	73	85	77	Total average.
INGESTA:															
Solids	40.1	32.3	21.1	22.3	30.1	28.6	26.6	28.8	14.7	21.7	31.4	15.2	19.7	19.	24.6
Fluids	103.	72.2	83.3	53.	63.3	60.	67.	62.6	92.8	43.6	82.6	62.	54.8	58.3	67.9
Total	143.1	905.5	104.4	75.3	93.4	81.6	93.6	98.2	207.5	65.3	91.4	72.2	74.5	70.3	92.7
EGESTA:															
Feces	7	7.5	7.8	2.84	9.6	5.65	5.82	4.75	5.85	6.94	7.55	2.6	4.82	2.34	6.3
Vomits			1.82		.20										.14
Sputa and saliva	2.2	16.6	9.7	2.8	3.94	.77	5.	0.9	.75	5.2	2.2	5.9	2.	1.73	2.8
Urine	58.5	36.8	50.8	36.2	32.2	42.5	39.8	32.6	64.	21.	49.5	23.9	30.	25.7	38.8
Total	67.7	55.6	62.9	48.4	45.1	48.9	53.	39.2	70.6	32.3	59.5	32.4	36.5	29.7	48.
Excess of ingesta over egesta	75.3	49.5	42.2	33.8	48.2	32.6	43.6	52.9	36.9	33.	64.4	44.8	38.	40.5	44.66
Weight of body (lbs.) monthly	+2.8	+.1	+1.4	—.6	—2.1	+1.1	—.4	+.7	=	+.1	+2.2	+.8	—2.2	+.4	+.6
Solids in urine (grains)	1226	856	776	758	732	704	676	626	604	596	592	574	574	550	70.3
Pulse	84.1	86.4	92.6	91.3	92.7	83.2	969	949	76.2	97.5	89.5	104.6	928.4	88.5	95.3
Respiration	16.	22.6	24.9	28.	20.6	97.	22.7	20.6	22.4	24.7	25.6	31.	20.6	29.7	23.
Meat and fish	6.8	6.2	5.2	5.4	4.1	4.3	3.8	4.7	.5	4.2	5.2	3.9	3.7	4.	4.4
Wine			2.6		8.					9.9		9.4		.9	.5
Ale and porter	15.1	8.2	14.7	19.	8.7	8.	10.	7.4	8.	2.4	8.	9.9	8.	20.	10.
Bread	21.7	18.4	9.1	8.7	14.	9.1	15.6	94.	6.8	8.6	96.6	8.4	7.9	8.2	12.

But in reference to respiration there is a change so marked as to arrest our attention, and so important as to lead to the belief of its being the immediate cause of the mischief.

In the very earliest moment of phthisis it has been already proved that there is a great diminution in the vital capacity of the lung—a diminution vastly too great to be accounted for by the accompanying dulness as indicative of the extent of tubercular deposition. It is true, that with all the help which our art can afford, the latter statement is matter of opinion, but I submit that although it is not capable of the demonstration which now belongs to the former, the conviction on the mind of the investigator is as strong as it could be if it were made cognizable to the eye. At this, as at an earlier period, there is a lessened amount of vesicular murmur and the presence of harsh respiration, and, perhaps, of wavy respiration or of prolonged expiration. The two former indicate a diminution in the action of the air-cells, the first directly and the second indirectly by the absence of the vesicular murmur which, when present, masks the bronchial sounds, and when absent presents them with their clear, short, and harsh characters to be distinguished. The disparity between the amount of diminution in the vital capacity of the lung and the tubercle then existing appears to me to be thus explained: that is, by regarding the lessened action of the air-vesicles with or without the deposited tubercle as the cause of the lessened quantity of air. This view is corroborated by the flattening of the chest, which is so constantly found even at that stage with a marked degree of lessened mobility, and, at the same time, diminished resonance on percussion, either in the slight degree which has been hitherto attributed to a natural dulness on percussion peculiar to certain individuals, or to the further degree indicating the presence of some solid material. The atrophy and the lessened mobility can only result from inaction or a lessened action of the subjacent lung on the principle that any part of the system diminishes in size as its action is lessened. The slightly lessened resonance can only be accounted for by the absence of that which when present gives the clear sound, for the construction of the chest is the same in all persons, except in those who have that part covered with fat or largely developed pectoral muscles, and it is not in either of these cases that the disease in question is commonly found. To these may be yet added another evidence, viz., the short and feeble inspiratory effort which even to the unaided senses is so frequently perceptible, but which by the help of the stethoscope is almost invariably met with in the early stage.

Thus all the circumstances of the case lead us irresistibly to the conclusion that there is greatly lessened action of the lungs, and that to an extent quite beyond the influence of the then deposited tubercle.

But to this statement may be urged the objection which I have already taken, viz., that evidences attending the disease are not necessarily anterior to and causative of it. To meet this, therefore, I would call your attention

to the large mass of patients who attend as out-patients at our hospitals, who, by common consent, are believed to be prone to phthisis, and in them we find the same flattening and lessened mobility, the same feebleness and shortness of inspiration, and the same lessened vesicular murmur, all or some of them, but, probably, to a less extent than is found in the early stage of phthisis. At this period, also, I have ascertained by a newly-invented spirometer that the quantity of air admitted into the lungs per minute is less than in healthy persons, and in no small proportion of such persons the natural capacity of the chest is small from a contraction of that cavity in all its diameters.

As the period of origin of phthisis is never ascertained with exactitude, I cannot specifically refer to the physical signs then existing, and as any case in which the signs just mentioned are present may not pass into tubercle, it is scarcely possible to give absolute proof of the connection between these signs and the tubercle of a later stage. Here again, therefore, we must in some degree rely upon common professional belief as to the class of persons predisposed to phthisis; and in such I venture to affirm that some or all of the evidences of lessened respiration now given will be found.

Now to what part of the lung structure does this lessened action apply. Obviously it applies mainly or exclusively to the air-cells. The bronchial tubes are mere conduits and do not directly bring the air into contact with the blood; that duty is reserved for the air-cells alone; but whether the power of expansion of the lungs is not in some degree conferred upon the minutest bronchi may be open to doubt; for I have ascertained that in an advanced case, one in which the total capacity shall not exceed 50 per cent., the quantity of air admitted in ordinary respiration shall not be lessened, in by any means the same proportion; a circumstance which, conjoined with the immense destruction of the air-cells, seems to imply, that not only do the bronchi contain air, but that some of them have the power of expelling and receiving some portion of it. But however this may be, it is clear that as the air-cells of a lobule lose their power of action from a deposit of tubercle, the smallest bronchi must become implicated also.

Thus as the function of the lungs is performed by the air-cells exclusively, any diminution of that process must be directly due to a diminished action of those cells. I have ascertained that the action of the cells consists in the acts of extension and retraction in a spiral manner, and it is probable that the first evidence of the lessened action of the cells would be found in the imperfection of the mode of elongation.

Thus I have endeavoured to show that the earliest indication of phthisis is the lessened action of the air-cells, and it is highly probable that this is commonly associated with or resulting from depressing agencies. We all know in our own persons the temporary effect of depressing causes, as grief, or disquietude of any kind over the action of the lungs, and have observed the slow and shallow respiration followed by long sighs or yawns possibly

indicating the accumulation of carbonic acid in the air-cells of the lung from the previous incomplete respiration. Moreover, as the function of respiration is so important and so unceasing, and as the air-cells are of a delicate organization, it is quite clear that they must be highly endowed with nervous influence from the cerebro-spinal, excito-motory, and sympathetic systems, and, consequently, be extremely liable to their own special diseases. As they have the power of extension and retraction, that power may be modified both towards decrease as well as increase; and as they are of delicate organization and so endowed with nervous influence, it is certain that they will both sympathize greatly with the general nervous system and be greatly influenced by it, and also be liable to their own special diseases, arising more or less from local causes only. Thus, the lessened action which constitutes or leads to phthisis may be either general or local; and whilst admitting that the multiplicity of causes point to a general action, we must not ignore the possibility of their being due to local causes only. I am anxious to refer to this, for we have each of us seen cases which appeared to us to have arisen from some local cause, as some prior local disease; but the prevailing notion of the general and blood origin of phthisis has led us to throw doubts over the correctness of our belief. Without venturing an assertion on a subject about which so little is known, I would take courage to ask if there are not grounds for the belief that acute phthisis is the local, as contrasted with the chronic phthisis, which is the more general form of the disease. Upon this point, however, I would not dwell, but I feel convinced that a wide field for inquiry is yet uncultivated in the diseases of the air-cells of the lungs, and that whilst we may not have given too much attention to the mere conduits of the air, we have given too little to the all-important air-vesicle.

That the lessened action of the air-cells to which I have referred as an evidence of phthisis is exclusively restricted to that disease I dare not venture to affirm. In many cases of chronic bronchitis there is lessened vesicular murmur and some lessened resonance on percussion, both due, in some degree, to the same causes as in phthisis. Whenever, however, there is lessened vesicular murmur with lessened mobility and both flattening and atrophy, and at that early period short and feeble inspiration with lessened quantity of admitted air, and with or without the slight dulness referred to, we may safely affirm that to be a case prone to tubercle.

At this period there is no deposition of tubercle, and it is that which I have ventured to characterize as the first or pretubercular stage, whilst the presence of tubercle should characterize the second, and that of destruction of the lung the third stage of the disease. It is, however, quite understood that as the whole of the lung is not implicated at once, the disease will have reached its third stage in certain portions, and only the first stage in others. The first stage probably endures for a lengthened period in many cases, for in how many instances have we noticed persons, evidently prone to

this disease, resist its attacks for years. But whether it endures for many years or not, it is sufficiently long to permit of the full employment of remedies fitted to restore the lessened functions. The difficulty lies not in the duration of the stage, but in the absence of agreement in the profession as to the existence, signs, and importance of this early condition, and more particularly from the ignorance of the public on this point, whereby the stage has long passed away before advice is sought. If, however, the profession could agree on this point, it could readily direct the attention of the community to it, and by advising a frequent examination of the chest of the younger members of families, obtain opportunities of detecting the disease thus early. Moreover, a belief in the hopeless nature of the disease, when once fairly set in, would induce the public to turn with readiness to the prevention of, or to the treatment of it in its earlier moments, if they fully understood that there is a conquerable stage in the disease in which treatment would commonly succeed.

Assuming, then, that the theory of the nature and production of phthisis now advanced is a true one, I proceed to offer an explanation of a few attending circumstances of interest.

The air which is chiefly involved in this lessened action of the air-cells is the residual air, or that which cannot be expelled by any voluntary effort during life. This is evident from the fact that the patency of the air-cells is maintained by the presence of this residual air, and that with lessened action, or closure of the air-cells, there must be a lessened quantity of the residual air. That the tidal air, or that which enters and leaves at each respiration, is not materially implicated, is evident from the small quantity of that as compared with the residual air, and from the fact that the former may remain intact whilst four-fifths of the latter may have been lost. The interest of this question is in relation to the value of the spirometer as evidence both of decrease and of improvement, and especially in relation to the chemical changes of the air in the lungs which are mainly or exclusively restricted to the residual air. Thus, no great diminution of the action of the air-cells can occur without a diminution of the residual air, nor any lessening of the latter without a lessening of the chemical and vital effects of respiration.

The explanation of the localization of tubercles to the apex of the lung, in the early stage, may be thus explained: As the direction of the trachea and the divisions of the bronchi is downwards, as is also the chief inspiratory power, it follows that the lower parts of the lung will be more readily and perfectly filled than the upper, and that the full distension of the air-cells at the apex can only follow the full distension of these at the base, whereby the distended base, as a fulcrum, directs the full current to the apex. This may also be proved by any one taking in a very full inspiration, for he will not perceive the peculiar sensation of distension at the apex until the inspiratory effect has reached its utmost extent. Therefore

at all times the extension of the cells of the apex will be proportionably less than elsewhere, and in a state of disease with enfeebled inspiratory power, the disparity will be still greater. Hence, in the first stage of phthisis, the part first affected will be the apex.

For the same reasons the liability to morbid actions will be greater there than elsewhere, for with lessened action there will be lessened vital energy, and consequently less power of resistance to morbid changes. Moreover, with less action there will be a lessened circulation, for nothing is more certain than that the circulation through the lungs is mainly supported by the act of respiration, and consequently as the latter fails so will the former, and this will, of course, be to a greater extent if solid matter is deposited so as to impede the passage of air through the smaller bronchi. Then with the lessened circulation there will be an increasing tendency to disease and a lessened power of absorption, whereby morbid or natural products may be less perfectly and quickly removed.

The air-cells having thus lost a part or the whole of their vital powers, they are fitted to become the depositories of diseased material, and hence, on a well-known principle, we may account for the selection (so to speak) of the lungs by tubercle, on the ground, amongst others, of the vast mass of such fitter receptacles which that organ offers.

To determine the origin of tubercle, and the immediate cause of its deposition in the air-cells, is a matter of great difficulty; but I venture to call your attention to the assertion of Dr. Carswell, that tubercle is first found on the free surface of the air-cells, and to that of W. Addison, viz., that tubercle on the lung is transformed epithelium. So long as the existence of epithelium in the air-cells was denied, this latter opinion was fairly open to question, but now that we must admit its existence, I feel that there are very high probabilities in favour of Dr. Addison's theory. No one who has carefully examined the material found in the air-cells in acute phthisis, or even in favourable circumstances in the recent formation in chronic phthisis, can fail to be struck with the great resemblance which exists between that structure and the epithelium of the air-cells, and the transformations which occur in them are common to both. It would be unjust to contrast them at a later stage, for such retained epithelium must be unnatural and diseased, and hence very fitted to put on further degeneration, and by that process to lose its natural characters, and to gain the earthy and oily products which constitute tubercle in its advanced condition. Moreover, on this theory the explanation is simple and natural, for as the air-cells lose their power of action and vital energy, the epithelium will be retained in the cell, and in its formation will be less and less perfect. Hence, after a time, in one or many cells, and in one or many lobules, the cells will have become filled by the accumulated epithelium, and when the distension is so great as to overcome the resistance of the lobular membrane, it will press upon adjoining lobules and impede their action, and thus in an in-

creasing ratio increase the liability to disease. In this mode we readily account for the greater comparative rapidity of phthisis after, than before, the deposit of tubercle, and the rate will doubtless be increased or lessened as the vital power of resistance of the lobular membrane, and therefore of the system as a whole, is great or little.

I do not think that frequency of co-ordinate deposits of tubercle elsewhere is adverse to this theory, for, assuming that the deposits are in many instances identical, they are commonly found in the same situation in different organs, viz., the epithelial cell, and whatever may lead to the diseased action in one organ may lead to the same in the same structure in another organ. Moreover, as we are not agreed as to what we shall call tubercle, it is a reasonable doubt which would question the identity of deposits in different structures; and then, again, as two morbid actions may be concurrent and not necessarily resulting one from the other, but both possibly dependent upon one or diverse anterior conditions, it is quite possible that a deposit may occur in the lungs and at the same time elsewhere, and both be due to the concurring action of depressed general vital energies acting separately in different localities.

We must admit that in many instances scrofulous deposits in various parts of the body do occur with pulmonary phthisis, but on the other hand, I am able to prove by long inquiry at the hospital, that the proportion of phthisical persons in whom, or in whose families, external evidences of scrofula have existed, is extremely small, and I feel justified in affirming the occurrence of the two phenomena to be co-ordinate action only. If the blood be diseased or scrofulous, and fitted to pour out morbid products, what can be so likely a cause of phthisis as the general exhaustion and variableness of system which accompanies it? or, on the other hand, in cases of phthisis with original defect of constitution, what so likely a result as that the blood shall become diseased as the phthisis advances, and lead to that state which, without the phthisis, is so often found.

I am anxious to make a distinction between circumstances which may be co-ordinate, or even dependent more or less on each other in certain instances, and those which are identical either in their nature or results. I believe that the connection of phthisis with scrofula is that of a coincidence, and is not evidence of any necessary relationship between the two diseases.

On the above principles we may also account for the intractable nature of the disease; for besides that it is located in an organ essential to life, its tendency is ever to the increase of morbid products, and its power, both of resisting morbid agencies and of removing morbid products, becomes less and less.

The occurrences of hæmoptysis at a period anterior to the deposit of tubercle, *à fortiori* at a period before the occurrence of destruction of tissue, is thus readily explained. As the action of the air-cells is in any part lessened, so will the quantity of blood in that part diminish, and as

the total quantity of blood in the body will probably remain much the same, there must be a larger quantity in other parts of the lung, and hence with congestion in the immediate locality of a diseased cell, a lobule, or elsewhere, there is a proneness to hemorrhage, and the exciting cause, cough, is only required to give development to it. In order to meet this difficulty nature increases the frequency of both respiration and pulsation, and thus for a time maintains a balance between the pulmonic and systemic circulation; but a period must arrive when that expedient will fail. If this be a fair explanation, it becomes a very important inquiry as to the propriety of interfering with such an hæmoptysis, or any increased frequency in the functions, and as to the possibility of arresting the former through the general circulation.

These explanations might be carried to any length, but I have already occupied too much space. My aim is rather to ask my professional brethren to draw their attention away from opinions, in reference to this great disease, which are both unprofitable and tend to stop further inquiry, and to direct them so that a rational treatment may be adopted, and a field laid well open to investigation. To regard phthisis as a blood disease is simply to shroud it in obscurity, and foster the belief, too well grounded it must be confessed, of the incurability of the disease; but the views which I have ventured to offer, seek to attract attention to the prevention of the disease, and to its very early arrest when it has commenced, and afford promise that in both directions our efforts will be successful.

63 GROSVENOR STREET, LONDON.

ART. VIII.—*Case of Wound of the Abdominal Walls, with Protruded Omentum.* By WALTER F. ATLEE, M. D., one of the Surgeons to St. Joseph's Hospital.

THE following case of *wound of the abdominal walls, with protruded omentum*, it is believed, will be found both interesting and instructive. Cases of the kind are not frequent, and surgical authorities differ widely in regard to their treatment. The account of the case is drawn up from the notes taken daily by the Resident Physician, Dr. J. J. Cruice; and it is but proper to premise that it was always determined to report it, whatever might be its termination:—

Daniel Blaney, æt. 22, of medium size, robust and healthy, a private in Company A, 21st Pennsylvania Regiment, was admitted into St. Joseph's Hospital, September 31, 1861. He had received, six hours before admission, while in a state of intoxication, a stab from a knife, in the abdomen. There was constant vomiting, with coldness of the extremities, and a small, frequent pulse.

On examination, a piece of omentum was found protruding through the anterior abdominal wall from a wound situated in the right lumbar region, rather below the level of, and three and a half inches from, the anterior superior spinous process of the ilium. The protruding mass, which was much congested with blood and quite hard, was six and a half inches in length, one and a half inches in width, and three-quarters of an inch in thickness. As is generally the case in traumatic hernia of the omentum, there was no peritoneal sac. Careful search showed that there was no protrusion of intestine. The swollen omentum, overlapping the edges of the wound, rendered it impossible to measure exactly the extent of the incision, but the knife before reaching the body had passed through the pantaloon and flannel-shirt, and in so doing had made a smooth, straight cut, exactly three-quarters of an inch in length. For a considerable distance round the wound there was great tenderness on the slightest pressure. There was no hemorrhage, at least none externally.

After some gentle efforts at reduction, it was found that it would be impossible to restore the protruded omentum to the abdominal cavity through the existing opening without using such a degree of force as would necessarily contuse and lacerate it. It remained, therefore, to decide between enlarging this opening, and then attempting its reduction, the ligation of the protruded mass, its excision, or expectation. For reasons that will be stated more conveniently after completing the history of the case, the latter course was adopted, and the protruded omentum was left as it was, covered simply with a piece of lint wet with cold water. The patient was ordered to keep very quiet in bed, stretched to full length on his back, a full dose of morphia was given to diminish pain and to keep the intestines at rest in case the knife had penetrated them, and the strictest diet was ordered—nothing but small pieces of ice being allowed.

On the following day, October 1st, there was an erysipelatous blush spreading over the abdomen, for which an ointment of sulphate of iron was used (℥j to ℥j of simple cerate), and the muriated tincture of iron was at the same time given internally, fifteen drops every two hours. The protruded omentum was enveloped with lint coated with this same ointment. In the evening an injection of soap and water was administered, which brought away a large quantity of feculent matter without any blood, giving assurance, as no blood was ejected from the stomach, while the vomiting was incessant, that the intestine had not been wounded. This vomiting continued until the 4th October, when it ceased after a few doses of brandy with aromatic sulphuric acid. The ready and constant action of injections, which were given every evening, gave sufficient evidence that it was not owing to any strangulation of the bowel, but was altogether sympathetic. On the 5th October all irritability of stomach had disappeared, and the patient took essence of beef and milk punch, in small quantities, frequently repeated, without suffering from nausea.

On the 6th October the patient imprudently reached out of bed to pick up a handkerchief from the floor, and brought on hemorrhage from the wound, which, though checked each time by the application of Monsel's solution of persulphate of iron, returned again and again for three days. The source of the hemorrhage was not discoverable; whether from the edges of the incised tissues or from a ruptured vessel in the omentum. A very considerable quantity of blood was extravasated into the cellular tissue around the wound, although this was prevented as much as possible by compresses of sponge, held in place by means of Velpeau's bandage for the

groin. When pressure was made with the fingers round the wound to expel this extravasated blood, it came out mingled with gas and a thin, dark liquid of a very offensive smell. On the 8th October the patient had a violent chill lasting eight minutes, which caused great alarm, lest it should prove a symptom of commencing pyæmia. On the 9th the hemorrhage had ceased, the discharge from the wound was more healthy, and the whole condition of the patient was satisfactory. On the 10th he slept very well without morphia, and eat with good appetite at breakfast one egg with toast and tea, and some beefsteak at dinner. On this day some four inches of the protruded omentum, that had gradually become black, flaccid, and of a most offensive odour, were removed as perfectly dead; the remainder was a firm, fleshy mass, to which some small gangrenous pieces, here and there, were still adhering. On the 12th all these dead pieces having come away, and what was left secreting everywhere healthy pus, it was pushed under the skin, and the orifice was closed by silver sutures, sufficiently far to prevent the remnant of omentum from again coming out. It had then the size and shape of a small little finger, and it had formed firm union with the muscles through which it was protruding. The wound in the skin was not closed entirely, in order to allow of the escape of any liquids secreted between the muscles and the skin, which had been separated by the hemorrhage. After this, with the exception of some delay from the pain and annoyance caused by two boils, one on the lower lip, the other on the back of the neck, which opened respectively on the 11th and 16th of October, and which, it is believed, are intimately connected with the chill above mentioned, the patient went on steadily improving.

On the 25th the wound had entirely healed, and he was allowed to sit up for two hours. He is now, November 5th, walking about, eating, with a good appetite, the ordinary food in the hospital, suffering no abdominal pains or dragging sensations, and having his bowels moved as usual. With the exception of some debility, the consequence of the confinement, the treatment, and the hemorrhage, the man has perfectly recovered from his injury.

The history of this case being now given, it remains to state the reasons that led to the adoption of the plan of treatment which was pursued. As said before, the question was, whether it would be best to enlarge the opening and then try to reduce the omentum; and again, if unreduced, whether it should be ligated, excised, or left to itself.

By enlarging the opening there was a risk of having a greater mass of omentum protruded, and thus of increasing the difficulties of reduction; and more than this, provided the reduction should be accomplished, a larger wound must expose the patient in a greater degree to ventral hernia from distension, if not to giving way, of the cicatrix. The situation of the wound being in the lower part of the abdomen, was very favourable to such an occurrence. As regards the statements made by some authors that painful dragging sensations during digestion are the consequence of not reducing protruded omentum, they were believed to be founded rather upon theoretical views than upon practical observations.[1] The ill effects of ligating

[1] Robert, Bulletin de la Société de Chirurgie, 1851, as cited by Nélaton, Path. Chirurg., tome iv. page 116.

the omentum in these cases have been abundantly proven.[1] To excise the mass would be to run the risk of hemorrhage, which might not be of much consequence, it is true, if the remaining portion continued in position; but, in case of its withdrawal, would lead to internal hemorrhage, and an effusion of blood into the cavity of the abdomen. It was, for these reasons, determined not to interfere actively in the local treatment of the case, but to trust to expectation, and, as the result has proved, there is no cause to regret this decision.

It was designed, on account of the interest and importance of the surgical question involved in the case here reported, and also on account of the neglect with which it has been passed by in modern systems of surgery, to consider at length the opinions of both ancient and modern surgeons in regard to the value of the different methods of treating penetrating wounds of the abdomen with protrusion of the omentum. This, however, as was afterwards discovered, has been so satisfactorily accomplished in a memoir contributed by Hipp. Larrey to the Academy of Medicine,[2] on the occasion of a case very similar to the one just related, that the design was abandoned.

It is thought fitting to quote the concluding sentence of this remarkable memoir of M. Larrey, as most appropriate to the present occasion:—

"May these considerations serve to demonstrate that in surgery, we can rationally and beneficially do something besides cutting, tying, excising, and destroying: it is to wait and to assist by the most simple resources of art the so powerful efforts of nature."

ART. IX.—*Brief Account of a form of Skin Disease occurring in Manufacturers of Kerosene Oil, and believed to be undescribed.* By HARRISON ALLEN, M. D.

IN the early part of the summer of 1861 a person who had been a workman in a Kentucky kerosene oil manufactory came into the ward for diseases of the skin of the Philadelphia Hospital, having a pustular form of skin disease of a peculiar nature. The patient had had the affection six months, and attributed it to some poisonous agent employed in the manufacture of kerosene oil, as it appears that in the works in which he was employed some other of his fellow-labourers were affected in a similar manner.

The disease first presented itself upon the hands and forearms; but at

[1] Pipelet. Mémoire sur la ligature de l'epiploon, in the Mém. de l'Acad. Royale de Chirurgie, tome 3ième, p. 373. Paris, 1819.

[2] Sur les plaies pénétrantes de l'Abdomen compliquées d'issue de l'epiploon, in the Mém. de l'Acad. de Méd. for 1845.

the time of his admittance it had extended to the chest, back, and inner surfaces of the thighs and legs, the face and scalp being entirely free. It commenced by the appearance of a number of small papules of a reddish colour, which in the course of one or two days became marked phlyzacious pustules. Each one of them bore upon its summit a black spot closely resembling the discoloured surface of sebaceous secretion. The pustule, in about the same time as was required for its maturation, desquamated and left behind a small deep pock somewhat resembling that which succeeds the smallpox pustule, but much less significant. The time ensuing from the appearance of the papule to the formation of the pock varied, but most generally five days were sufficient for the completion. In a comparative few instances the process of maturation appeared checked and the papule would change to the pock without any pus having made its appearance. Occasionally one of the pustules, after having desquamated, would again go through the same conditions before the skin would resume its natural colour and sensation.

The eruption was most plentiful upon the anterior and posterior parts of the chest, where the papules, pustules, black spots, and minute depressions were all intermingled.

The pain was very trifling. A sensation of soreness in the pustules was complained of, which became worse at night when the patient was warm in bed. There were no constitutional symptoms whatever. The man was stout, strong, and, with the exception of the cutaneous affection, in every respect healthy.

His treatment consisted of a soda bath every morning, and five grains of iodide of potassium three times a day.

This was continued with but little advantage during the latter part of June and the whole of July. On the first of September the iodide of potassium was stopped. He now commenced with five drops of liq. potassæ arsenitis three times daily, together with the soda baths and the local application of ung. hydrarg. nitratis. Under this treatment he gradually improved. The papules became fewer and smaller until there existed but a few discoloured spots upon the back and chest, the other parts being entirely free.

The conclusion which one would naturally arrive at after hearing the history and seeing the appearance of this patient would be, either that there was some poisonous agent contained in the materials from which the coal oil is extracted, or that in the process of manufacture certain chemicals deleterious to health were employed. But, unfortunately, there is no principle or acid found in the coal upon which any suspicion can rest. Those manufacturers with whom the author has conversed refuse to accuse any set of ingredients of producing pernicious effects; but they, on the contrary, maintain that they are quite demulcent in their nature, the oil especially being used by the workmen as a local application to abrasions and burns.

On the other hand, chemists are unable to affirm that any articles used in obtaining the oil are capable of being exciting causes to disease. The substances are generally familiar acids and alkalies, and it is impossible that their accidental contact with the skin should produce a peculiar eruption which could last half a year. But it must be acknowledged that on this subject there is a certain amount of unavoidable ignorance. Each manufacturer may, and in many instances has a secret process for obtaining his oil; and of course if there be any morbid symptoms arising from the injurious employment of these agents, the nature and origin of such effects must alike remain unknown.

It would then seem that we cannot arrive at a definite and satisfactory conclusion; and we are led to suspect that the patient might have been induced to accuse his trade for causing that which would be the natural results of depraved habits. But the man has an untainted constitution and is temperate. He has never had any form of skin disease previous to this attack; and the fact that it came upon his hands first and that he suffered in common with his fellow workmen similarly engaged, go to prove the external source of the disease.

The pustules with their blackened summits resembled acne; but the face was entirely free, while the breast, back, and lower limbs were thickly strewn with them. Again: the eruption spread slowly from the hands upwards over the trunk: and it would seem that there was some deep-seated poison to produce reiterated effect; for in some instances, as mentioned above, a simple pustule would several times rematurate before resolution would occur. So that these facts, taken together, show that the symptoms of this form of eruption are quite peculiar; and although it is as yet somewhat obscure and the present advantages of investigation limited, it nevertheless presents an interest to the practitioner from the fact that it seems to have been in some manner intimately connected with the manufacture of an article which is now exciting general attention.

REVIEWS.

ART. X.—*The Transactions of the American Medical Association.* Instituted 1847. Volume XIII. 8vo. pp. 930. Philadelphia, 1860.

THE Transactions of the thirteenth annual session of the American Medical Association, presented in the goodly-sized volume before us, comprises several very able and interesting reports and communications on subjects of general interest. It is, however, by no means the scientific papers that have been elicited by the Association, however favourable may be the estimate placed upon them, which form the most important of its labours. Its chief value, after all, consists in the beneficial influence it is calculated to exert upon the educational and ethical interests of the profession throughout our country. In this direction, its action, it is true, has not been productive of all the good that could be desired, still, it has not been altogether without results in the highest degree beneficial. During the last twelve or thirteen years a marked improvement has taken place in both the character and attainments of those who have entered the medical profession: greater facilities have been furnished for the study of medicine as a science and an art, while the number of those who gladly avail themselves of these facilities has every session been constantly on the increase: so that among the graduates sent forth annually by our medical schools there are now to be found many, the excellency of whose attainments bear testimony to the competency and fidelity of their teachers, as well as to their own diligence and aptness as pupils, and who, by their moral character, their intellectual attainments, and their preparedness to enter upon the practice of medicine, and by cautious observation to enlarge our knowledge of the nature, causes, prevention and cure of disease, cannot fail to confer honour upon their profession, and a solid good upon the community at large. It must, nevertheless, be admitted that, in this country, medical education is in many respects imperfect, and in some portions of it altogether inadequate as a preparation for the proper fulfilment of the solemn and weighty responsibilities of those into whose hands are committed the health and lives of the community; and that, in consequence, there is every year a large number of imperfectly educated individuals licensed as practitioners of medicine. We need not, therefore, be surprised that the subject of medical education should have occupied as prominent a position in the deliberations of the American Medical Association at its last as it had at each preceding session.

Two committees having the subject in charge presented each a report, with a series of resolutions appended for the action of the Association. The first of these committees was one appointed at the session of 1859, to confer with a committee appointed by the convention of medical teachers. Its report was presented by Dr. Blatchford. After a very full discussion of the several topics necessarily connected with the object of their appointment, and a free interchange of opinion with the members of the joint committee of conference, the committee of the Association are convinced

that our medical teachers are by no means insensible to the defects in the present system of medical instruction, and are not indisposed to co-operate in good faith in any proper measures of reform that may be proposed. They are fully persuaded that notwithstanding much has been done and is now being done to afford to medical students an adequate professional education, there is still much more to be effected in order that the qualifications of our medical graduates, throughout the country, may become conformable to the standard approved by the committee. They suggest, however, that the changes necessary to this end must necessarily be effected gradually, and that more good is to be expected by a sure but slow progress towards perfection than by any great and sudden revolution.

The series of resolutions attached to this report embrace the following propositions:—

"1st. The requirement from every candidate for the degree of Doctor in Medicine, certificates, showing that he has been engaged in the study of medicine, under the direction of a reputable practitioner, recognized by the Medical Association, during *the full* period of three years, and that he has attended two entire courses of lectures, delivered in two separate years, by a faculty regularly organized according to the requirements of the Medical Association.

"2d. The keeping of a permanent registry by each medical college, in which every one who presents himself for matriculation shall be required to enter his name and age, the period when he commenced the study of medicine, and with whom; stating any diploma he may have received in evidence of previous education, with the name of the college or school from which it was received.

"3d. The attendance of every candidate for the doctorate upon a course of clinical instruction regularly for at least one year.

"4th. The presence at all examinations of candidates for graduation as Doctors of Medicine, of two or more delegates from the Medical Society of the State in which the college is located, with the privilege of voting on the question of the qualification of said candidates for a degree.

"5th. The appointment by the several State Societies, at their annual session, delegates in accordance with the preceding proposition.

"6th. No college to be recognized by the American Medical Association which does not require from all applicants for matriculation satisfactory evidence of suitable preliminary education.

7th. Efforts approved and recommended to obtain from individuals or the State the endowment of medical colleges and professorships.

"8th. The colleges to be recognized as regularly organized by the Medical Association are such as have been represented at a meeting of the convention of medical teachers, and which comply also with the regulations proposed above."

The resolutions proposed by the committee received the sanction of the Association. The suggestions set forth in them are, upon the whole, judicious, and could they be fully carried out would unquestionably exert a most beneficial influence in the promotion of a proper system of medical education. There may, perhaps, arise in the minds of some a doubt as to any advantage that would result from permitting delegates from State Medical Societies to vote on the question of the qualification of the candidates examined before them for admission to the doctorate. Be this as it may, there can be no doubt, we think, that the presence of such delegates at the examination of the candidates for medical honours, must have a beneficial effect by preventing any being admitted to the doctorate who had not passed a satisfactory examination.

The second report, that of the standing Committee on Medical Education, which was presented by Dr. D. Meredith Reese, enters into a brief review of the plan of medical education in the United States compared with that of other countries, and the improvements necessary to render it suffi-

cient for such a preparation of candidates for the degree of Doctor of Medicine, as shall qualify them for safe and successful practitioners of the healing art. The system of professional education approved by the committee is set forth in a series of resolutions affixed to the report. These provide:—

"1st. That no one is to be received into the office of any physician or matriculated as pupils of any medical school, who is not at least seventeen years of age, of good moral character, and possessed of a respectable English, classical, and mathematical education.

"2d. That the term of office study, including attendance upon lectures, shall be four years; the last year to be chiefly devoted to *clinical instruction* in medicine, surgery, and midwifery.

"3d. That attendance upon three full courses of lectures, in such college or body of lecturers as shall be recognized by the American Medical Association, be required of candidates for graduation as Doctors of Medicine. Said candidates to be admitted to examination after three full years of study in all the branches in which they are required to be instructed, excepting clinical medicine, to the study of which they will be expected to devote an additional year.

"4th. That the period of instruction in the medical schools shall occupy nine months, being divided into two sessions. The *first*, for the *junior class*, to be occupied chiefly in the study of the elementary branches: the *second*, for the *senior class*. to be devoted to the practical and more complex branches. Not more than four lectures to be delivered each day in either session; the lectures to be preceded by a recapitulation of that of the previous day, by a series of questions addressed to the class.

"5th. That the number of professors in each medical school shall be increased.

"6th. That the examination of candidates for matriculation and reception into the junior class shall be repeated before their reception into the senior class, by the faculty or examiners appointed by it, in order to test the sufficiency of their preliminary education and their proficiency in the several branches taught in the elementary departments: their admission into the senior class to be contingent upon the satisfactory result of such examination. Examinations to be made, also, at the commencement of each session as to the improvement that has been made during the preceding term.

"7th. That the final examination of each candidate for graduation shall be conducted separately, in the presence of the entire faculty of the school, and witnessed and certified to by a commission of equal number, to be appointed by the State Medical Society in whose bounds the school is located, or by the faculty. The approval of said commission to be necessary for admission to the doctorate.

"8th. That no medical school shall be recognized by the American Medical Association which does not possess a hospital of its own, or which has not secured for its students, previously to their being licensed to practise as physicians, regular clinical instruction in a hospital containing not less than eighty beds. The so called *college clinics* not to be considered as furnishing an adequate substitute for the required clinical teaching.

"9th. That the practice of examining students for graduation, before the close of the regular session, and while the lectures are still in progress, is to be regarded with marked disapproval.

"10th. That the title of each chair as announced in the curriculum of each college shall indicate actual and full instruction in the several branches which are virtually promised to be taught by it."

The plan of instruction set forth in the propositions just given is unquestionably a most judicious one, and one which could be carried into execution with little delay or trouble. In some few of its details it would certainly admit of improvement. The same remarks will apply to it in respect to the introduction of delegates from the State Medical Societies as witnesses of the examination of candidates for graduation and certifiers

to their competency, as was in reference to a similar suggestion made by the Committee of Conference. Especially are there serious objections to the appointment of such delegates by the faculty of the school, the examination of the pupils of which they are to superintend.

The entire report and resolutions of the Committee on Medical Education demand the careful and candid consideration of the profession previously to their final disposal by the Association.

The topic which, next to that of medical education, has occupied most prominently the attention of the Association at nearly every session, is Medical Literature. A report was presented at the last session by the standing committee on the subject, through Dr. D. F. Wright, of Nashville, Tennessee. From a consideration of the medical works, American and European, published in this country during the two years over which the report extends, and the number of those previously published of which new editions were issued within the same period, the inference is drawn that the physicians of the United States are beginning to rely for professional instruction more upon their own writers than was formerly the case: a fact which will, we think, be found well established by all who will take the trouble to examine the evidence bearing upon the question.

Within a very short period a number of works have been issued from the American medical press by native authors; which are confessedly entitled to rank among the best in their respective departments. Taking these, as we may with the utmost propriety, as representative books—books exactly adapted to the condition and wants of American physicians, it is very properly assumed in the report under consideration, that whatever they have in common, considering the great diversity of their subjects, they possess because of their being American works, and that consequently their similarity in this respect is to be received as the distinguishing characteristic of American medical literature. Examine them and they will be found nearly all to belong to that class of works in which individual truths already known are compared, classified, and brought into system, so as to present clearly the general deductions or principles to which they lead, and to mark their true practical application. By extending our examination to the entire list of our leading medical writings of native origin it will be found that they, also, with few exceptions, belong to this same class. It is precisely the kind of books which is required by the profession in this country in consequence of the peculiar circumstances amid which it is placed—the only form of medical literature, if we except the periodical, which is adapted to the present wants of the great body of our practitioners.

"Our medical writers produce exclusively text-books, or at the best, convenient books of reference, such as may, with the least possible expenditure of time and labour be consulted by the preoccupied practitioner; and this, not because we are without the men who could produce a different order of medical writings, but because a different order of books would necessarily fail to secure purchasers and readers. There is no supply because there is no demand for any other class of works than is printed."

We have in this paragraph a concise but most truthful exposition of the actual cause why in the medical literature of the United States there should be so large a preponderance of systematic compendiums and treatises on the several branches of medical science; of works compiled from the facts, observations and deductions presented by preceding and for the most part European writers; and so few original monographs, the materials of which were derived from fields of research hitherto unexplored—and through

which new truths have been revealed, and our professional knowledge extended beyond its previous limits. Now to improve the tone, enhance the value, and increase the amount of our medical literature, it will be necessary to multiply the number of educated physicians in our midst, to augment the ranks of those who have the desire and opportunity to cultivate medicine as a liberal science and not simply as an art based upon empiricism; of those who are ready to avail themselves of every means adapted to improve and extend their acquaintance, equally with the philosophy as with the practice of medicine. It is to such men that we must look for the producers as well as for the readers, and of consequence, the encouragers of original and erudite works in the higher branches of etiology, pathology and therapeutics. We have only to create the demand for a more extensive and elevated medical literature of our own, based upon original observations and researches, and the supply will quickly follow.

The section of medical topography, epidemic diseases, etc., presents two able and instructive reports. One on the Medical Topography and Epidemic Diseases of the State of New York, by Dr. Joseph B. Smith; the other on the Medical Topography and Epidemics of North Carolina, by Dr. James H. Dickson.

The first of these reports is a very extended one, occupying one hundred and eighty-nine pages of the printed Transactions. It presents a brief notice of the geology, hydrography, mineralogy, flora, fauna, meteorology, and ethnography of the State of New York. Under each of these heads the information given, though necessarily a mere outline sketch, is in the highest degree interesting and instructive, constituting an appropriate and valuable introduction to the consideration of the epidemics of the State. These are examined under the heads of contagious, infectious, and meteoritious. As infectious diseases Dr. Smith includes such as are of either koino-miasmatic, idio-miasmatic, or idio-koino-miasmatic origin. Meteoritious diseases he defines to be those which are the result of certain insensible insalubrious qualities of the general atmosphere. The more remarkable of the meteoritious diseases are influenza, pneumonia, diphtheria, erysipelas, and Asiatic cholera.

A careful examination of the histories furnished us of the endemic and epidemic diseases that have prevailed at different periods and in different ocations will, it is our impression, show that the arrangement adopted by Dr. Smith is rather artificial than real. It will be found, we think, very difficult to determine the actual limits by which the diseases belonging to any one of the classes referred to are separated from those which appertain to the other two. In many instances they will be seen to run into each other, so as to render it very difficult to say whether they have originated from paludal exhalations, domestic or civic malaria, or from some occult morbific constitution of the atmosphere independent of either of these poisons. In, perhaps, the greater number of cases both koino and idio-miasmata will be found to be concerned in the development, location, extension, and intensifying of epidemic diseases; even those of which the first link in the causation may be strictly meteoritious.

In a State of an extent like that of New York, and exhibiting the same diversity in medical topography, character, pursuits and density of population, in its different districts, it is not possible to study profitably its endemic or even epidemic diseases excepting in reference to the particular portion of the State in which they occur. Hence, in his account of the periodical fevers of New York, Dr. Smith considers them according as they occur in

the maritime, Hudson River, elevated table-land, great lake, and northern regions of the State.

In the maritime region, he remarks, it may be stated, as a general fact, that

"Those summers and autumns are most productive of febrile diseases in which the quantity of rain is above the mean, and the range of atmospheric temperature unusually high. In some years, for reasons unknown, the localities most subject to fevers enjoy an almost entire immunity from these diseases, and such immunity sometimes continues for several successive years; and yet, in every summer and autumn the number of sporadic cases is sufficient to mark the miasmatic localities."

The same remarks will hold good, we believe, in reference to all malarious regions. In the State of Pennsylvania the disappearance of periodical fevers from neighbourhoods where they had previously appeared every year as the regular autumnal epidemic, and without any appreciable change in the condition of those neighbourhoods, has, of late, become of common occurrence.

"In the survey which has now been made of the districts and localities in the State of New York, in which periodical fevers prevail, it will be observed, says Dr. Smith, that the topographical and meteorological conditions in which they occur are, for the most part, the same as those in which they prevail in the more southern latitudes. It is, however, noticeable that the intermittents and remittents, in this State, are less disposed to assume a pernicious or congestive form; and what is no less noteworthy, the malaria does not so generally induce visceral enlargements, nor that sallow hue of the countenance, and cachectic condition of the system so frequently observed in southern miasmatic countries. Individuals, however, who suffer from ague in this State, are not entirely exempt from these malarious affections.

"In the sketch we have given of the periodical fevers which are due to malaria, there would be a defect were we not to notice one of the more common and severer forms which these diseases sometimes assume. We refer to dysentery. Though frequently occurring in situations where malaria does not exist, it is usually prevalent in the summer and autumn, in miasmatic localities, where intermittents and remittents are rife, and of which it may justly be regarded as a modification. These diseases occurring contemporaneously in the same locality, and being convertible into one another, and manifestly produced by the same efficient or malarious cause. Now, the source from which fever, whether originating from malaria or any other cause, derives its dysenteric form, is manifestly a peculiar variety of atmospheric influence, or what we denominate *epidemic meteoration*, an influence which, varying in its properties in different years, varies the diathesis and phases of popular diseases."

The account given by Dr. Smith, in the report before us of the diseases arranged by him under the heads of koino, idio, and idio-koino-miasmatic, as these have occurred of late years within the different sections of the State of New York, presents a mass of facts, apparently carefully observed and accurately reported. These facts are of great value as materials, illustrative of the etiology—for constructing, if we may so express ourselves, the first link in the natural history of a class of diseases in everything relating to which the physician, as well as the community at large, are deeply interested, from their extensive prevalence—especially in the newly-settled portions of our country, and the amount of suffering and the permanent impairment of health so apt to be entailed by them upon those whom they attack. An interest greatly enhanced by the fact that, in nearly all our older settlements, these diseases may be extinguished by the removal of their causes. It is remarked by Dr. S., in concluding his examination of the periodical fevers of New York, the conviction must be strengthened at every advance made in surveying the malarious localities within that State, that very many of

these might, by a rigid system of drainage, be brought into a condition incompatible with the generation of the endemic cause of fever; and the same remark may with truth be repeated in respect to the malarious regions of other States. There can scarcely be a doubt entertained,

"That such a change could be effected, to a great extent, under the direction of a State sanitary commission, and a corps of engineers provided with ample funds for the purpose; and that the outlay would be more than repaid, directly by the general improvement and security of the public health, and, indirectly, by adding to the vital force employed in enhancing the wealth of the State."

Excellent as are the materials so abundantly furnished by the report of Dr. Smith on questions of the deepest interest in respect to the etiology of fever, we find it impossible to give anything like a useful and satisfactory analysis of them within any reasonable limits.

The history furnished in the report, under the head of the Meteoritious Epidemics of New York, of influenza, pneumonia typhoides, diphtheria, and erysipelas, as these diseases are found to prevail in the State, will be read with deep interest and no trifling profit. In respect to most of them the notice given by Dr. S. is both retrospective and contemporary.

The report of Dr. Dickson on the Medical Topography and Epidemics of North Carolina occupies only eighty-two pages. It is a well-digested and most valuable paper.

The diseases noticed by Dr. D. are, 1st. *Bilious fever*, in its several forms; an affection which may be considered as the most constant, as it is the leading epidemic of nearly all Southern climates, especially of those in which a damp summer, or a season of heavy rains is followed by a very dry and hot autumn. 2d. *Typhoid fever;* which, of late years, has come to pervade the entire area of the State, from the mountains to the seaboard, being apparently but little influenced by climate or local conditions. 3d. *Scarlet fever;* sporadic cases of this disease are met with almost every year; while, as an epidemic, it is found to prevail in different parts of the State, at intervals of only a few years. 4th. *Cerebro-spinal meningitis.* This very grave epidemic appears to have prevailed in certain districts of North Carolina, in 1856 and 1857. 5th. *Dysentery.* In its epidemic form it is encountered almost every year throughout the State. Of late years, we are told that the disease has assumed a comparatively mild form; it being now a rare thing to meet with those formidable cases which were of frequent occurrence twenty years ago, approximating in severity to the tropical forms of dysentery as described by Johnson and Annesley. 6th. *Cholera infantum*—a confirmed endemic of the State, and liable to prevail epidemically, every year, both spring and autumn. 7th. *Aphthous* or *follicular stomatitis.* This affection prevailed so extensively in the early part of the summer of 1858, as, in the opinion of Dr. D., to be fairly entitled to be ranked as an epidemic. 8th. *Jaundice*, which prevailed extensively in the city of Wilmington in 1847, and in other portions of the State in 1857 and 1858. 9th. *Pneumonia.* This, according to Dr. D., is to be regarded as the great endemic of the winter and spring months, throughout every portion of North Carolina; prevailing so extensively almost every year, as often to be entitled fairly to the character of an epidemic. The account of each of these diseases, as given in the report under consideration, is particularly instructive.

Under the head of *Cerebro-spinal Meningitis* mention is made of a very unusual endemic, attended, in many of the cases, with marked symptoms of that disease. The history of the epidemic is furnished by Dr. J. J. Summerell, of Salisbury, in whose vicinity it prevailed.

During the months of March and April, there occurred to a great extent among young persons, mostly children, an affection closely resembling what is described in the books as catarrhal fever. Its prominent symptoms were drowsiness, heat of surface, rapid but rather feeble pulse, dry and slightly furred tongue, sordes on teeth, great muscular prostration, extreme dryness of nasal passages, with so turgid a condition of the lining membrane as to render respiration through the nostrils difficult and painful. When aroused the patient complained of intense pain in the region of the frontal sinuses. There were marked symptoms of catarrh always present, attended, however, with an unusual amount of constitutional disturbance. Generally the bowels were costive, though sometimes diarrhœa was present.

This condition of the patient, with little or no alteration, would continue for from one to three days, when very generally there was observed a small red erysipelatous spot on the face, usually on the eyelids and temporal spaces, slightly tumefied at first, but increasing rapidly, it would, in some instances, become so great as to close the eyes in a few hours. In every case in which the erysipelatous eruption was well marked there took place a speedy amelioration of all the graver symptoms, and convalescence speedily ensued. Occasionally, cases occurred in which there was no external evidence of erysipelas, but, instead, bronchitis or pneumonia would ensue. These cases, also, under judicious treatment, generally terminated favourably. The chief reliance in their management was upon a stimulant and supporting plan modified according to circumstances, with such a mild mercurial impression as was compatible with the asthenic character of the disease.

In another class of cases, after the early symptoms above described, there were developed those of cerebro-spinal inflammation. In these coma gradually ensued, or the frontal pain increasing greatly in intensity, soon gave place to the wildest delirium. In some instances the pupils of the eyes became so permanently dilated as to greatly impair or destroy vision, in other instances they were closely contracted. There was more or less stiffness of the muscles of the neck. In one case there was a tendency to episthotonos. The patient soon lost all consciousness, and gradually sank. In one case death was preceded by convulsions. It is needless to say that these cerebro-spinal cases almost invariably proved fatal.

Since the year 1856, erysipelas, we are told, has prevailed in Rowan and Cabarrus Counties more extensively than it was ever known to before, but it is seldom that it has been attended by symptoms of cerebro-spinal meningitis.

The almost universal conviction of the physicians who had an opportunity of carefully observing and analyzing the cases occurring during the epidemic referred to, was, that in those where an erysipelatous eruption occurred upon the face, as well as those in which the catarrhal symptoms were followed by those of thoracic or cerebro-spinal inflammation, the disease was the same—being only different forms of constitutional erysipelas producing variously situated local disease.

In treating of pneumonia Dr. D. remarks, that the disease, as it prevails in North Carolina, assumes all the varieties of type described by systematic writers, from that of the most intense sthenic inflammation to the gravest form of the adynamic and congestive varieties. In the greater number of the cases which now occur the disease is described as being of a subacute character, and, according to the report before us, may be treated without the lancet. Local bleeding, antimony, and the veratrum viride, would

seem to be quite sufficient to control their progress; cases, nevertheless, continually occur that cannot be prudently nor safely managed without the employment of general bloodletting. Dr. D. believes, that in the veratrum viride we have a remedy of great efficacy in the treatment of pneumonia, and one which, in many cases, may safely supersede the use of the lancet. When, however, the inflammation is of a high grade, as indicated by a sharp (hard?) quick pulse, and great heat of skin, he admits that bloodletting, both general and local, will be indispensable to secure a favourable result. In these cases he has known the veratrum viride to fail in exerting any salutary influence. In some cases of puerperal pneumonia he has found the veratrum a very valuable remedy, either by itself or in aid to bloodletting. This form of the disease, we are told, is a very formidable one; the fatal course being often uninfluenced by any plan of treatment.

Passing by the report of the surgical section, a notice of which will be given hereafter, we come to the report of the section on Practical Medicine and Obstetrics. The first paper embraced in this report is one on the *Influence of Alcoholic Drinks in the Development and Progress of Pulmonary Tuberculosis*, by Dr. N. S. Davis, of Illinois. This has been already specially noticed in our preceding number, p. 504.

The next report is on the Education of Imbecile and Idiotic Children, by Dr. H. P. Ayres, of Indiana. It is a long and somewhat elaborate paper, occupying 140 pages of the printed Transactions.

As its author well remarks, amid the many brilliant achievements of the nineteenth century, in the discovery and successful application of means for remedying the physical defects of the human organism, and for the due development of the intellectual and moral faculties of man, there is none which exceeds in importance or is adapted to confer a greater amount of benefit upon society than the education of the idiotic and feeble-minded. The subject has been, as yet, only sketched imperfectly in its general outlines; what may be its ultimate results when further research and the lessons of experience shall have enabled us to fill up these outlines, and perfect and complete the design in all its details, it is impossible to anticipate. From what has been accomplished we have a right, certainly, to anticipate the most brilliant success in the future.

Facts and observations in respect to almost everything connected with the subject are, as Dr. Ayres justly remarks, still needed. We have yet to learn, with greater precision, the various forms, degrees, causes, concomitants, and effects of idiocy and mental imbecility; the number, age, sex, location, parentage, and social condition of the feeble-minded in every portion of our country, the greater or less capability for improvement by the several classes into which they may be arranged, and the educational means that have been adopted here and elsewhere for the development of their physical, moral, and intellectual powers, with the success by which these have been attended respectively.

The leading object of the report before us has been the collection and collation of the facts now known in reference to the subject generally: especial attention being had to the present state of the education of the imbecile and idiotic, and the means adapted for its improvement. As a subject intimately connected with that of idiocy and its amelioration, Dr. Ayres presents at the close of the report a *résumé* of cretinism.

The report is arranged in sixteen different chapters, the first three of which treat of the mind, the proper definition of idiocy, and its characteristics. The fourth chapter is devoted to a classification of idiocy. After

a consideration of the classification which has been proposed, Dr. Ayres suggests whether a more accurate one might not be based upon some of the senses or desires affected instead of upon any indications of intellectual aptitude or deficiency.

"The sensation of hunger," he remarks, "is among the first manifestations of animal life. It generally may be observed soon after birth, and continues throughout life to indicate a healthy or unhealthy condition of the organism. Some idiots manifest no sensation of hunger, others do, but make no efforts to satisfy it, while another class not only have the sensation, but will use efforts to procure food. It is true dementia may assume these various features, and the subject may manifest no wish for food; but it need only demonstrate that the individual has sunk to the lowest type of idiocy, which may or may not be permanent. I am, to some extent, aware of the presumption of any suggestion from one who only makes deductions from the observations of others, but will venture the inquiry whether a total absence of desire for food may not indicate the lowest class, or 'Profound Idiocy;' a desire for food, but an insufficient amount of instinct or intelligence to seek it, represent 'Idiocy;' a desire and intelligence enough to seek it represent the third, or 'Superficial Idiocy.'"

The most desirable classification of idiocy in reference to the education of those who are its subjects, would be one based, not merely upon the different grades of intellectual and moral development exhibited in different individuals, but, also, if it were possible, upon the susceptibility for improvement there exists in each form and grade of mental imbecility. How far such a classification can be effected, so as to render it susceptible of a practical application, we shall not pretend to decide. A more intimate acquaintance with the causes and forms of idiocy may probably lay the foundation for its accomplishment.

The degree of idiocy present in different cases is the subject of chapter fifth, while those of the two succeeding chapters are the number of idiots in the United States, and their condition. The causes of idiocy are considered in chapter eight; and in chapter nine, the important question, Can idiots be educated? The subjects being closed in chapter ten, by some general reflections. The remaining six chapters treat of cretinism, its causes, physiognomy, localities, number of its subjects, and their susceptibility to educational influences.

The report of Dr. Ayres, although it can lay but slight claim to originality, is nevertheless replete with instructive matter, and will be read with the deepest interest. Its scope and arrangement, and the nature and form of the materials it embraces, are such as to preclude the attempt being made by us to present an analysis of its several chapters. To notice, even with the utmost brevity, the leading topics discussed by the author and the facts adduced in their support, would necessarily require the occupation of so large a space of the *Journal* as to exclude other papers that have an equal claim upon our attention.

The entire subject of idiocy and its treatment is one that presses itself with an almost irresistible force upon the attention of the medical men of the United States. Upon them will devolve, in a great measure, the labour of perfecting the system of education adapted to render the mentally imbecile competent to provide for their own support, and of carrying it into effective operation in every portion of our country. No one of greater magnitude and importance, certainly, can claim their attention and co-operation. The question of idiotic education is still unsolved; what has been already done towards its solution must, however, convince every one who will take the trouble to investigate it, that in its future developments all have a common

interest morally, socially, intellectually, and even pecuniarily, throughout their several relations—to their own households, to the community amid which they reside, to their country, and to the entire human family.

There are, as Dr. Ayres has shown, several considerations which make the United States a favourable field for observations in regard to all that relates to idiocy and the means adapted for its amelioration—

"Our wide extent of territory, embracing the different climates of two zones, with every grade of soil from the richest alluvial to the most sterile plains; every altitude from the sea level to that of perpetual snow; lake, river, and ocean shores; spring, well, hard, and soft water; while by constant migration and intermarriage, a perpetual change or mixture of temperaments is kept up, an unceasing influence of a foreign population who gradually commingle with our older inhabitants, thus mixing the blood of all nations under the sun, and affording in our growing country a wide field for scientific observation."

But to properly cultivate this field there must be a concert of action in all portions of the land—"a concurrence of men of heart;" men who are willing to make sacrifices, and labour without remuneration in collecting and reporting facts having a bearing upon the subject of mental imbecility in its several grades, and the capability for education in each.

The next report is on Asylums for Inebriates, by Dr. C. McDermont, of Ohio.

Asylums for the reception of the intemperate exist in various parts of the United States. In these they are guarded from the means of giving way to the temptation to indulge in intoxicating drinks, by which, beyond its walls, they are constantly assailed, and for such a length of time as shall be sufficient, in conjunction with a well devised and judiciously administered moral and medicinal treatment, to effectually overcome their morbid appetite for alcoholic stimulants. The beneficial results derived from these asylums have been, so far, of the most encouraging character. Through them it has been shown, that a radical and permanent cure of intemperate habits and propensities may be obtained in a large majority of cases. And while common sense and almost universal experience would seem to prove beyond the possibility of doubt that an asylum is as necessary for the reception and treatment of inebriates as for the insane, the statistics which have thus far been furnished us of their operation show that as a curative means they are equally, if not more successful in respect to the first class of unfortunates, as in respect to the latter. Asylums for the inebriate, to re-echo the language of the report before us, constitute the great desideratum of the present age.

"It is not in the power of philanthropy to devise a scheme more fraught with benefits to the suffering race. Through its instrumentality thousands of our fellow-citizens will be rescued from ruin, and themselves and families restored to happiness and respectability. In all coming generations, the inebriate asylum is destined to be prominent among the charitable and remedial institutions of every civilized nation. It will stand as an ark of safety, a house of refuge to which the perishing drunkard may fly for deliverance, and from which he shall come forth in newness of life to pronounce blessings on the names of Turner, Butler, Francis, and all others who, through faith in the curability of the inebriate, shall nobly exert themselves for his salvation."

The concluding report is on American Medical Necrology, by Dr. Christopher C. Cox, of Maryland. It contains short notices of the more prominent of the members of our profession, who have died recently. It does not admit of analysis.

There now only remains to be noticed the Report of the Surgical Section of the Association. This report embraces besides an abstract of the minutes of the section drawn up by the secretary; a paper on the various surgical operations for the relief of defective vision, by Dr. M. A. Pallen, of St. Louis, Mo.; a communication from Dr. Joseph M'Dowell, of St. Louis, Mo., on the improvements in the art and science of surgery, during the last fifty years, and one from Dr. Lewis A. Sayre, of New York, on morbus coxarius, or hip disease.

The report from each of the sections is prefaced by a brief minute of its proceedings—to which, in that from the surgical section, is added an account of the discussion which took place upon the reading of Dr. Sayre's communication. As to the propriety of inserting in the published Transactions even an abstract of the minutes of the proceedings of the several sections a reasonable doubt may suggest itself, but we believe there can be but one opinion entertained as to the impropriety of publishing so meagre and profitless an outline of the discussions which take place at the meetings of the sections in regard to any of the subjects which may be brought before them, as that given in the report of the proceedings of the section of surgery—an outline that is neither calculated to do justice to the speakers, nor to confer credit upon the Association. If the discussions which take place in the several sessions are to be recorded, it should be done in a manner which will render them available for scientific and practical purposes; and, to insure entire accuracy, before the discussions are published, they ought to be submitted for revision to the parties who had participated in them.

The paper of Dr. Pallen is not such a one as we should have expected to find among the Transactions of a body which, like the American Medical Association, professes to represent the talents, and to wield the influence of the medical profession of our country for the elevation of the character and for the enlargement of the attainments of its members. The paper under consideration cannot present the slightest claim to originality. It is simply a compilation of the leading facts and deductions furnished by standard authorities on the subjects treated of, not, upon the whole, very well arranged, nor couched, always, in the most accurate language. It contains no important facts drawn from the personal observations of the author. Nothing, in fact, which is not far better set forth in the leading authoritative works on ophthalmology, with which our libraries are so abundantly supplied. Dr. Pallen proposes, he tells us, to complete in a future communication the history of the several defects of vision not yet treated of by him. If the promised communication is to be of the same character as the one under consideration, we trust that it may not be ordered for publication. It is high time that the printed Transactions of our national medical congress should be protected from the insertion of mere compilations on any subject—of communications destitute of originality in respect to the facts they comprise, or to the deductions which the author bases on such facts. A single report, presented at each session of the Association, which is calculated by the exhibition of new and more full and accurate observations to enlarge the common fund of medical knowledge, or to render more intimate and exact our acquaintance with the etiology, pathology, and therapeutics of those diseases which we are called upon daily to treat, will redound more to the honour of the Association, and confer far more benefit upon the entire profession of our country, than a multitude of voluminous communications upon "things pertaining to the science and the art of

healing," which present nothing but that with which every well read medical man should be already familiar.

The report of Dr. M'Dowell on the improvements which have been made in surgery during the last half century, is neither distinguished by the correctness of its style, the purity of its language, the dignity of its manner, the usefulness of its matter, nor the fulness or exactness of its history of the improvements of which it professes to treat. It is a rambling, garrulous production, as utterly destitute of dignity as it is of reliability. We are utterly surprised that the section before which it was read should have tolerated it to the end, and, if possible, even more so, that it should have been willing to assume the responsibility of recommending it for publication in the Transactions of the Association.

The communication of Dr. Sayre is on a subject of the deepest interest. Whether we take into consideration the frequency of its occurrence, the class of patients among which it occurs, the obscurity of its early symptoms, and the deformity which is so liable to result from it even when it is most successfully managed, it is evident that every communication which professes to throw any additional light upon the causes, predisposing or exciting, of morbus coxarius, and upon the true character of the morbid condition upon which it depends, or which proposes to introduce us to a safer, simpler, and more efficient plan of treatment than that now pursued, must necessarily command our serious consideration.

Dr. Sayre assumes the position that the disease of the hip of which he treats—known among surgeons as morbus coxarius—is not always, nor even very commonly, the result of constitutional disease—of a general strumous cachexia, as is generally supposed; but, on the contrary, that in the majority of cases it is produced by accidental causes affecting individuals of a healthy, nay, even, in many instances, of a robust constitution. The emaciation, anæmia, and depraved nutrition by which the disease, in its progress, is almost invariably attended, are considered by him as in every instance the consequences of the local disease.

As a deduction from this pathology of hip-disease, Dr. Sayre suggests a strictly local treatment for its cure. He directs that, in the first stage of the disease, the affected joint be placed at perfect rest by a suitable apparatus which is also adapted to relieve the inflamed synovial membrane from the pressure of the head of the femur, while motion, to a certain extent, of the joint is, at the same time, permitted. In the second stage he proposes, by puncture or subcutaneous incision of the articular cavity, to relieve the latter from the morbid effusion by which it is now distended, and which augments and keeps up the irritation of the part; and, finally, so soon as caries of the head of the femur is clearly manifested he points to the operation of excision of the dead portions of bone as a certain means of eradicating the disease. After the operation he proposes, by appropriate and well-adjusted splints, to place the joint in a position best adapted to favour its healing, while such an amount of motion is preserved in it as to render the limb a useful one.

It is not our intention to enter into any extended criticism of the views, whether pathological or practical, advanced by Dr. Sayre in the paper before us. That his pathology is a mere assumption, unsustained by any well arranged and carefully analyzed series of observations, seems very certain. That cases may occur of disease of the hip-joint, the result most generally of some violence or other injury inflicted directly upon the part, is by no means improbable. But in respect to the particular hip affection known as morbus

coxarius, all the facts we possess would seem to point most unequivocally to a general scrofulous taint of the system as constituting, in every instance, the predisposition to the local disease—the source from which the latter derives all its pathological characteristics even in the cases where its exciting cause may have been clearly traceable to the influence of cold—to a sprain or some other injury implicating directly the affected joint. All who have had frequent opportunities of studying hip disease must have been struck, we think, with the unmistakable signs of the strumous diathesis by which every case was attended.

Of the treatment recommended by Dr. Sayre we have very little to say. We are not, as yet, in possession of all the materials necessary for the formation of any very positive conclusion in regard to its applicability and results.

In respect to the extension splint originally proposed by Dr. Davis, but which Dr. Sayre would appear to claim (rightfully or not we have not the facts to enable us to say) the credit of having introduced into use in the disease under consideration, and more fully developed its proper mode of application in order to derive from it the greatest amount of good, it is evident that its employment cannot fail to be of advantage from the very inception of the disease, whether we recognize the latter as strictly local or the result of a general dyscrasy. The only novelty possessed by the splint is in its materials and mode of construction, the application of the principle upon which it acts to the treatment of hip disease has been long known. It was clearly taught and ably enforced by the late Dr. Physick in his surgical lectures.

The proposition to puncture the articular capsule of the hip to permit the discharge of its vitiated contents strikes us as being, in the present state of our knowledge, one of questionable propriety. The description of the operation given in the report before us is far too loose, and the facts adduced in support of the judgment of the author as to its beneficial results are too few and indefinite to satisfy the cautious inquirer.

In justification of the proposition to excise the diseased head of the femur so soon as its carious condition is satisfactorily made out, as a means of saving the life of the patient and preserving for him his limb, with a fair chance of a useful amount of motion in the hip-joint, Dr. S. has collected all the cases he could find on record in which the operation has been performed, and has arranged them chronologically in tabular form. The cases amount to 110. In 36 of them death ensued; *two* are reported as unfavourable, while in 72 recovery ensued, with a more or less useful joint.

The table of cases referred to will not, we are convinced, bear the test of a close scrutiny. It is very certain that in many of the cases included in it, the excision at the hip-joint was not performed because of the presence of hip disease but to remedy the effects of chronic rheumatism, of injury from gunshot wound, or in consequence of spontaneous separation of the head of the femur, or of necrosis from injury. More than one of the cases reported as successful, terminated, in fact, fatally; while Cases 9, 15, 52, and 60, are, manifestly, merely reduplications of Cases 18, 16, 65, and 89. We shall thus have to reject some 34 cases from Dr. S.'s table of "excisions of hip-joint for caries;" and we think it probable that a careful examination into the subsequent history of the remaining cases would show that in some of those which are reported as recoveries the patient ultimately died. This is certainly true in respect to cases 26 and 48. The last of which is reported in full in Barwell's work on diseases of the joints. D. F. C.

ART. XI.—*A System of Surgery, Theoretical and Practical, in Treatises by Various Authors.* Edited by T. HOLMES, M. A., Cantab., &c. In four volumes. Vol. I. containing General Pathology, and Vol. II. containing Local Injuries, Diseases of the Eye. London: John W. Parker & Son, West Strand, 1860, 1861. 8vo. pp. 825 and 895.

THIS is a library of monographs on surgical topics, by men of eminence and experience, selected for the especial purpose of treating what each one was believed to be best qualified to discuss. In the words of the preface,

"The object of the book is to unite into a complete system the opinions and experience of many men, most of them hospital surgeons in London, and most of them writing on subjects of their own choice. As each subject must be treated with something of the completeness of a monograph, the work must necessarily be voluminous; but both contributors and editor have done their best to present each essay in as moderate a compass as the topic would allow."

Such a plan of publication has always been a favourite one. It has succeeded well, as applied to the teaching of medicine; but, although occasionally projected, and long wanted, it has not hitherto been attempted in a general treatise on surgery. Partaking of the character and comprehensiveness of the cyclopedia, this collection of "treatises" affords many of the advantages and more of the freedom of preparation and arrangement of a systematic work; and hence, for the best purposes of teaching, it is perhaps the most useful form which could be adopted.

With a good table of contents, such as we find in each volume, and an equally good index—such as will doubtless be prepared—the particular method of distribution is of very little consequence. All classification must, of course, be arbitrary; and where there are so many different topics, this classification must be more than usually subject to contingencies, and governed by convenience as much as by any positive logical requirement.

The editor's arrangement, for which he holds himself responsible, is as follows:—

"I. The diseases which affect the whole system are first described, and this part comprises the essays ending vol. i. p. 529.

"II. The next part treats of injuries which either involve the whole or a large part of the body, or which may be met with in any region. This extends to the end of the essay on gunshot wounds, at the commencement of the second volume. These two parts comprise the whole subject of surgical pathology.

"III. The various local injuries are next described; and in this part the anatomical order has been followed, the body having been divided into eight regions—the head, face, neck, thorax, back, pelvis, upper and lower extremity. By this plan it was thought that the injuries which affect the same parts, and which in practice have to be diagnosed from each other, would be brought into the same part of the book and under the same author.

"IV. The principles of operative and minor surgery, and of the employment of anæsthetics, follow the essays on local injuries.

"V. The next part comprises the surgical diseases of the various organs of the body. These have been arranged according to the function of the parts affected: as diseases of the organs of special sense—the eye, ear, and nose; of the organs of locomotion—the bones, joints, muscles, tendons, and their sheaths, &c.

"VI. An appendix completes the work—comprising the principles of surgical diagnosis, of the surgical pathology and treatment of childrens' diseases, the

construction and management of hospitals, and various miscellaneous matters which it was found difficult to bring under any of the previous heads."

This plan comprehends a full body of surgical theory and practice, including many important topics which are not alluded to in ordinary systematic works, and others which are very slightly and incidentally touched upon. Whatever merely critical objections may be urged, it will probably be found to answer as well as any other for really practical purposes.

It is very difficult to present a fair idea of the contents, so varied in their nature, of two octavo volumes of over eight hundred pages each; and this difficulty is not lessened by the style of condensation which has been practised by the authors of the most important papers. As a whole, the collection certainly presents, within a comparatively small compass, a very able, clear, and trustworthy view of the portion treated, of the general subject of the "system," in accordance with the latest and best light that has been thrown upon it. A work which is the result of the care, learning, and practical experience which have evidently ruled in this, and emanating directly from the great hospitals of London, could not fail to be in the highest degree interesting and valuable as the authoritative exponent of the knowledge accumulated in those unsurpassed fields of study and practice. We look upon the present school of London as at least equal to any in the world, and to those who speak only the English language, decidedly the best; and hence we expected to find, in a collection of essays by such men as Paget, Simon, and their accurate and accomplished associates, an offering to surgical science and practice which would honourably represent their school, and materially aid the progress of genuine surgery, by establishing, in a definite manner, some of the latest waymarks. Nor have we found anything, in an unavoidably hasty examination, considering the character of the work, to justify a sense of disappointment. The papers are naturally and almost necessarily unequal, but all are good and some are excellent. Some may seem, and perhaps are, too brief; and, chiefly from the desire for brevity, unnecessarily dogmatic. The inherent obligations of the duty, however, must afford the best excuse for these immaterial shortcomings in its performance. Practical hospital experience, on the largest scale, is evidently the basis of the most if not all of the articles; so that more or less expression of authority is very natural, as well as proper, in a series of essays which are addressed to the students and practitioners of Great Britain, in demonstration of the latest views and practice in the London hospitals, by the surgical teachers of those schools, whose names and reputations are already so familiar to the English reader. There is, however, no deficiency of references to cases and authorities, American no less than European, and especially to statistical data and historical summaries, in most of the papers, wherever they seem to be desirable and compatible with the general plan. Some of the articles are especially valuable, in the assistance they afford by their citations, for more extended investigation; and, although there is no such thing among them as a mere compilation, their topics are generally treated with a discriminating regard to other authorities, so far as the necessary condensation would allow.

The first volume commences with an excellent treatise on inflammation, one hundred and forty pages in length, by Mr. Simon. This is a philosophical and practical monograph upon a subject which still maintains its paramount importance as the introductory topic in the study of surgical disease. It forms an admirable preliminary essay, and is so complete in itself, so clearly and comprehensively arranged and illustrated from every point of view, so

accurate in its delineations and just in its reasonings, and so full in its historical references, that it could not fail to be of great service, if issued by itself in a separate form.

We are able to quote the concluding paragraph only of a section of five pages devoted to cautions as to the application of antiphlogistic treatment. After a very full and discriminating consideration of the proper management of the different forms and stages of inflammation, with reference to the use of depressing and supporting agents, he closes his excellent and timely remarks against the abuse of antiphlogistics, with the following still more needed and appropriate warning against the opposite extreme:—

"Nor is it only the depressant treatment which may be overdone. Indeed, in the present day, fashion sets in the other direction; and perhaps not a little harm results from misapplied alcoholization of the sick. The cases in which life is saved, even during inflammation, by the judicious use of alcoholic stimulants, are infinitely more numerous than those where it is saved by bleeding; and the use of such stimulants, in certain cases of inflammation with debility, is among the most important resources of medicine. But the student must learn not to abuse this great medicinal agent; not to prescribe it as a thing of routine, in all cases of inflammation bearing a certain name; but always to give or withhold, and (if giving) always to proportion it, according to the special requirements of the individual case.[1] For, if treatment is to be indiscriminate, medical advice is but a sham. And there may be death in the practice of Van Dunk as well as under the prescription of Sangrado." (p. 132.)

Mr. Simon terminates his tract with a very interesting chapter on what is termed book references. In this he does not attempt a bibliography, which would be only in the way, however limited and select. His idea was to give a sort of *catalogue raisonée* of the leading steps, as shown in the different authors—"a very general statement of what," in his opinion, "have been the most important *momenta* towards developing the theory of inflammation taught by him in the preceding pages." Although this "statement" is offered with diffidence, it will doubtless stand the test of criticism, and may be regarded as an effective appendix of *pièces justicatives* to the author's treatise, no less than a very useful guide for his readers.

Next comes a well-considered paper on abscess, by Mr. Holmes Coote. There are several practical remarks in this which we should like to dwell upon as worth attending to. A single quotation will have to suffice. It is of the two lower paragraphs on the first page (141), in relation to pus.

"There are two doctrines as to the origin of pus. First, that the fluid is formed out of the exuded plasma of the blood (Rokitansky). Secondly, that it is formed by a rapid cell-growth, set up by irritation in the parenchyma itself (Virchow). The cells from which Virchow considers pus-cells to be generated, are the corpuscles of areolar tissue (*Bindegewebs-körperchen*), which he supposes to permeate nearly every part of the frame. This latter view is the one more generally adopted, although the universal existence of these corpuscles has yet to be proved. Modern pathologists do not regard pus as degenerated lymph. The white corpuscles of the blood, the lymph-corpuscles of the chyle, and pus-corpuscles, are identical and indistinguishable. They differ in their mode of origin.

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[1] "Without referring to cases in which wine or brandy has been wrongly given to patients who rather required lowering treatment, the writer can say that, on various occasions, he has seen a convalescent suffering considerable nervous disorder from merely continuing the large quantity of stimulus which had been necessary to him during earlier periods of his illness. And in one such case the cause of the inconvenience was not suspected, till it had occasioned the patient a first attack of epilepsy."

The two former are generated within a vascular system, normally. Pus is generated external to the vascular system, abnormally. Lymph-corpuscles cannot escape from the blood, and pus-corpuscles cannot enter it, except by rupture of vessels; consequently the latter cannot be regarded as a degenerated form of the former.

"Inasmuch as pus consists of myriads of cells swimming in serum and formed at the expense of the tissues, it follows that prolonged suppuration is accompanied by a corresponding amount of emaciation and waste of the body. Pus may be readily removed by the absorbents. The serum is taken up as any other fluid. The pus-cells either dry up, when they form a cheesy pultaceous mass, which may ultimately become cretaceous, and has often been mistaken for tubercle; or the fatty matter undergoes granular disintegration, the cell-wall softens, and the whole is removed in the usual manner."

Next in order we have a characteristically clear and instructive but short chapter on sinus and fistula, by Mr. Paget. Among the methods of treatment, *drainage* is specified, and the perforated caoutchouc tube of M. Chassaignac is referred to as a "happy invention, applicable to a great number of cases; but chiefly to those in which a sinus or incomplete fistula depends mainly on pus collecting at a level below, or distant from the aperture of discharge, or more generally, when pus is apt to be retained." He gives some instances of these conditions, which need not be repeated here. He also refers to the "seton of one or more wires or silk threads," as one "which may be usefully employed, in some fistula in which the track is too small for a drainage tube," "to vivify the granulating walls and bring them to coalescence." There is no doubt that these agents have caused some disappointment in badly-chosen cases, and have been thus involved unjustly in more or less ill repute, but it is equally certain that Mr. Paget's recommendation is well founded, and that they are extremely serviceable when properly employed.

Four other articles are contributed in the first volume by Mr. Paget, all of them on important subjects, and, as a matter of course, able and sufficiently exhaustive. They are on *ulcers* (23 pages), *tumours* (*innocent*) (146 pages), *contusions* (7 pages), and a most interesting one, of 40 pages, on *wounds*.

The remaining treatises in the volume are, a second by Mr. Holmes Coote, on *gangrene* (21 pages); one on *erysipelas and the allied diseases* (40 pages), by Mr. Campbell de Morgan; one on *pyæmia* (31 pages), by Mr. G. W. Callender; one on *tetanus* (21 pages), and another on *animal poisons* (31 pages), by Mr. A. Poland; a short one on *delirium tremens*, by Dr. A. W. Barclay; three on *scrofula*, *hysteria*, and *collapse*, respectively, by Mr. W. A. Savory; a full and practical summary on *syphilis* (87 pages), by H. Lee; a careful and comprehensive one on *cancer* (72 pages), by Mr. C. H. Moore, and another on *wounds of vessels* by the same author; one on *burns and scalds*, *accidents from lightning*, and one on the *general pathology of dislocations*, both by the editor, Mr. T. Holmes; and one of fifty-six pages in length, giving a very good exposé of the *general pathology of fractures*, by Mr. T. K. Hornidge. The list here presented will give some idea of the amount of labour bestowed upon the preparation of the volume. It will, at least, exhibit the practical importance of the different topics treated and the high position of the writers. The authors' names are well known to journal readers and students of recent surgery, as those of active and accomplished hospital surgeons, some of long-established eminence and a few but recently known to fame beyond the circle of the London societies and schools. The essays are not enumerated above in the order which

they occupy in the volume itself, being here grouped together, for convenience of space, in the order which the names happen to take in connection with the first essays to which they belong.

Of these different papers, those which are most likely to attract attention are that on wounds by Mr. Paget, Mr. De Morgan's on erysipelas, Mr. Savory's on collapse, Mr. Lee's on syphilis, and the two papers, respectively, of Messrs. Hornidge and Holmes, on the general pathology of fractures and on the general pathology of dislocations.

They are all highly interesting, and convey the requisite principles and precepts in a comprehensive and practical manner, keeping always in view the further development of the "system"; since they, as well as the other essays, are evidently introductory, referring frequently, for additional illustration, to subsequent portions of the work. The paper of Mr. Paget, on wounds, and that of Mr. Hornidge, on the general pathology of fractures, are particularly instructive, and afford evidence of much careful elaboration and superior professional judgment.

The second volume is occupied with local injuries of the body, and with diseases of the eye. The latter subject is placed at the end of this volume, out of its originally assigned position, in order to make way for a more convenient arrangement of other portions, and because its special nature rendered it a matter of comparative indifference in what part of the work it was introduced. The nature of the subject, and especially its extent, as understood by such competent authorities as Mr. Dixon, would quite as well, we think, have justified its omission altogether. Such a thing as a complete and thorough practical treatise on the diseases and injuries of the eye, which can be regarded as a decent substitute for the larger works expressly devoted to the subject, is not to be found in any of the systematic works on surgery, notwithstanding that each one has made the effort to supply the deficiency at the expense of space which, in some if not all cases, might be much more usefully employed. Mr. Dixon's essay on this occasion is the best attempt of the kind, and probably as creditable and useful a production as the circumstances would admit. Still it is but a meagre outline or abstract; and although it may comprehend a fuller list of topics, can hardly be regarded as equal, for practical purposes, to his already published and very successful "Practical Study." It differs from this, however, in being more systematic, and has the advantage of presenting the author's latest experience in regard to the questions of the day. Dr. Dixon treats of his subject, under the usual heads, in twelve chapters, which occupy two hundred and twenty-three pages—much the largest share, thus far, of the whole work. This amount of space and a good deal of condensation, not always observed, however, have enabled him to present an epitome which may serve very well in the absence of a separate treatise, but ought not to be allowed to take its place.

The first paper in the second volume is a first class one—of unequalled interest to American surgeons—by Mr. Longmore, the Professor of Military Surgery at Fort Pitt, Chatham, and Deputy Inspector-General of Hospitals, on *gunshot wounds*. This essay may be regarded as the result of the combined and adjusted experience of the armies of Europe; having the advantage of the experience accumulated in India, in addition to the very large amount individually acquired by the author and his colleagues; and being largely based upon the records of the older as well as of the more recent campaigns on the European continent.

It is not only agreeably and perspicuously written and conveniently

arranged, but it teems with practical remarks on every page, and is so unusually rich in illustrative cases, and general observations drawn from invaluable sources at his command, that we should be glad to see it circulating everywhere among our medical officers who are now engaged in the field. There is no chapter or book extant in this country, and none, we suspect, abroad in the English language which approaches it in the effective and thorough manner with which it exhibits this all-important subject.

Material results must be looked for, doubtless, in confirmation and correction of previous views and practice, from the experience to be gained in the present struggle in our country, which, for the first time, and, we trust, the last, has assumed the dimensions of a European war; but it is only through such monographs as this, and the "Notes" of McLeod, and the still authoritative and indispensable commentaries of Guthrie that we can hope for the spread of the needed amount of information at the start among the great mass of our military surgeons. Of course, the continental works of similar character, which the recent wars have developed to an extent hitherto entirely unequalled, are within the reach of considerable numbers of our best men, who are far from idle or indifferent in their use of them and of all the British sources; but the publications of the country must be looked to for the guidance of the majority, who will be left to their own discretion in the performance of their surgical duties and consequent acquirement of experience. The practical intelligence and intuitive sagacity of our countrymen, ever ready to listen to the dictates of common sense and to meet an emergency with a successful expedient, will certainly develop methods, and, perhaps, new principles hitherto unthought of; while we hope to see the inevitable opportunities no less useful in enabling them to determine still unsettled questions, and in arousing inquiry in regard to others which have been too hastily allowed to rest. If there be any plausibility in these self-evident views it is equally reasonable to desire, as already hinted, the republication of such excellent instruction as that of this and of three or four of the papers in these two volumes. Especially would we urge the reprinting of this one on gunshot wounds and the succeeding ones on injuries of the different regions of the body; so as to bring them into the hands of those who would appreciate them as no others could just now, and whom they may never reach in any other way.

After referring to Mr. Guthrie's remark, in regard to the influence of the Peninsular war between 1808 and 1815, that the surgical principles and practice which prevailed at the commencement were superseded on almost all important points at its conclusion; also to Mr. Guthrie's quotation from Sir Astley Cooper, to the effect that the art of surgery received from the practical experience of that war an impulse and improvement unknown to it before, he goes on to say—

"The still more recent military operations in Algeria, in Schleswig-Holstein, in the Crimea, and in India, have afforded the opportunity of testing practically the applicability to army practice of some of the great improvements which have been accomplished in the civil practice of surgery in Europe since the termination of the war in 1815. Among these may be particularly enumerated the avoidance of amputation of limbs by recourse to excision of joints; resection of injured portions of the shafts of long bones; mitigated amputations, by removal only of those terminal portions of the extremities which had been destroyed by the original injury; and the practice, generally, of what has been styled conservative surgery. In these wars, too, the value of chloroform, as an anæsthetic agent in military surgery, has been fully established. They have, also, especially illustrated the influence of various states of health and climates on the results of gunshot wounds."

These and other effects which he alludes to, of recent European experience, are well known in the United States; but they cannot be too often referred to in considering the subject in relation to the thousands of wounded, who are destined to be under the treatment and observation—now and for months to come, in all climates, and under every conceivable influence—of hundreds of practitioners of every grade of qualification, few of whom can claim the slightest previous personal experience as military surgeons.

Mr. Longmore's treatise occupies ninety-four pages. It is followed by one of about the same length on *Injuries of the Head*, in which this important and difficult topic is treated in a most careful and thorough style, by Mr. Prescott Hewitt. Next comes a shorter but equally thorough one on *Injuries of the Back*, by Mr. A. Shaw; another, also excellent, by Mr. Holmes Coote, on *Injuries of the Face;* a third, also full of practical learning and precept, by Mr. H. Gray, on *Injuries of the Neck;* a fourth, of great interest and value, particularly now, by Mr. Alfred Poland, on *Injuries of the Chest;* a fifth, of similar character, by Mr. George Pollock, on *Injuries of the Abdomen;* a sixth, of the same practical fulness and accuracy, by Mr. J. Birkett, on *Injuries of the Pelvis;* and, lastly, two excellent chapters by Messrs. W. H. Flower and Carsten Holthouse, respectively, on *Injuries of the Upper Extremity* and *Injuries of the Lower Extremity.*

These topics are treated with considerable fulness, and a sufficient attention to details which, without any disposition to a waste of words, presents us with something more than the abstracts that might be excused in a volume of so much bulk. We have been exceedingly interested in these papers, and are glad to find the evidence, in their completeness and laborious regard for the requirements of the system, of a determination on the part of the authors, industriously, to present the science and art in their proper shape and proportions, and to sacrifice nothing to convenience or policy in injurious attempts at condensation.

There is so much that is instructive, even to the experienced practitioner, in their practical and discriminating manner of dealing with mooted questions, none of which appear to be neglected; their abundant illustrations, drawn at once from an unlimited field of hospital experience, and their candid and sensible mode of handling the whole subject, that these particular portions of the work possess a value which places them far above any publications on the same topics yet issued in the language. They fully justify the expectation that the complete work will really present to the professional reader a fitting monument of the latest progress of modern surgery. As such it ought to be within the reach of every earnest student and practitioner, and of every hospital surgeon. E. H.

ART. XII.—*On Food and its Digestion: being an Introduction to Dietetics.* By WILLIAM BRINTON, M. D., F. R. C. P.; Physician to St. Thomas's Hospital, and Lecturer on Physiology in that Institution. With forty-eight engravings on wood. London, 1861: Longman, Green, Longman & Roberts. 8vo. pp. 485.

WITH Dr. Brinton the study of the apparatus and function of digestion has been a favourite specialty. He is well and favourably known as the author of the articles "Stomach and Intestine," in the *Cyclopædia of*

Anatomy and Physiology; of an excellent essay on the "Pathology, Symptoms, and Treatment of Ulcer of the Stomach;" and of a larger work on the "Diseases of the Stomach." In the treatise now before us we recognize another valuable addition to the literature of a subject with which our author is thoroughly conversant.

In this volume the process of digestion is described in its natural connection with the food on which it operates, and with the purpose which that food, as thus elaborated, fulfils. The structure and function of the organs of digestion are portrayed with unusual care and minuteness; while the complex relations of digestion to nutrition are illustrated by closely associating in the narrative the details of the demand for food with those of that process of bodily waste by which this demand is dictated. The study of food is made to harmonize with that of digestion; and while the whole subject of digestion is treated of as a natural subdivision of the institutes of medicine, the physiology of food is regarded as constituting a basis for the practice of physic, in reference both to the prevention and to the cure of disease.

The work is divided into thirteen chapters. The first treats of bodily waste, or the metamorphosis of tissue, and of the necessity for food occasioned by this disintegrating process. Alimentary constituents, and the nature of food are discussed in Chapter 2. Chapters 3, 4, 5 and 6 are occupied with an elaborate description of the digestive act. The various kinds of animal and vegetable food are considered at length in the 7th and 8th chapters. Chapter 9 treats of condiments; Chapter 10, of tea and coffee; and Chapter 11 of alcoholic drinks. Chapters 12 and 13 are devoted to cookery and the choice of food or diet. To these chapters are added two appendices, one of which treats of vomiting, and the other of dietaries.

In the human organism two powerful champions, waste and repair, struggle incessantly for the mastery, and in thus striving, impart each to the other, paradoxical as it may seem, continued power and activity. This conflict, in its varied aspects, constitutes the complex process which we call life. The conditions of it are few and simple, but they are also essential. For heat, air, water and food are the busy auxiliaries, aiding now one and then the other of these two combatants. Waste necessitates repair, and repair presupposes waste. Waste cannot go on long without repair, nor can repair continue unless waste has been previously operative. Herein lies the mystery of life; for we may philosophically regard disintegration or molecular death as the first in the series of phenomena which constitute life. This form of death, or gradual destruction is necessary, as the physiologist well knows, to preserve the life of the organic being as a whole; or, in other words, to rescue it from somatic death. But this disintegrating process, if allowed to go on unchecked, will itself, sooner or later, bring about the entire cessation of life-actions. In the reparative process the check is found. Assimilation and disassimilation are sometimes nicely balanced; at other times, first one and then the other predominates. In early life repair gets the better of waste, as shown in the extraordinary activity of development and growth; in middle life these two actions are about equal in power and results; while in old age both waste and repair decline in activity, but the former more rapidly than the latter. Hence, while the young being gains in weight more than it loses, the aged one dwindles more and more as he approaches the close of his allotted term of life.

The channels of this waste are four in number. In the language of our author—

"The excrement and the urine respectively convey away a moist solid mass, and a much greater bulk of a liquid containing a large proportion of dissolved solids. The skin, besides that gradual loss of substance from its surface, which, under many circumstances, becomes perceptible to the naked eye, insensibly discharges vapours which are easily augmented and aggregated into the liquid state of sweat. The lungs, likewise, discharge vapours and gases; of which the former are often seen to collect as drops of liquid upon neighbouring objects, while the latter may be recognized as carbonic acid and ammonia by the application of appropriate tests to the air exhaled. * * * *

"The carbonic acid given off from the body daily may be estimated at about 2 lbs.—a weight which, at ordinary pressure and temperature, would correspond to a bulk of about 17 cubic feet. Of this quantity, it is probable that a single ounce, or half a cubic foot, is all that finds its way out by the skin; the remainder being exhaled from the lungs in the air expired, the carbonic acid of which is about a hundred-fold more abundant than that of the inspiratory air (.04 and 4 per cent. respectively).

"The quantity of water daily set free seems to be about 6 lbs. Of this rather less than half appears to be given off in the feces and urine (the latter containing about ten times as much as the former), and rather more than half by the skin and lungs. Of the latter moiety, again, the whole of which is often included under the term transpiration, the pulmonary share may be regarded as not more than 1 lb.; the skin furnishing the remaining 2–2½ lbs., usually in the form of watery vapour. * * * *

"Urea and its congeners are justly regarded with extreme interest in respect to the quantitative aspect of nutrition. So small an amount of nitrogen is given off by the skin and lungs, whether pure or in combination (ammonia, &c.) and even by the intestinal evacuations (barely 3 per cent. of the daily loss of azote), that it is by this constituent of the urine, which contains nearly 50 per cent. of nitrogen, we may best measure both the waste of the azotized tissues, and the quantity of azotized food necessary to replace it.

"About 480 grains, or 1 oz., would seem to be a tolerably exact estimate of the urea excreted daily by a healthy male adult. Reducible to scarcely more than half this quantity for the female, and a quarter for the child or the aged person, and doubled, or halved, by diseases in which bodily waste exceeds (fever) and falls below (chronic heart disease) the standard respectively, it is equally amenable to two other sources of variation. Of these, one, as might naturally be expected, is apparent rather than real, being such a diminution in the urea excreted from the body by a diseased kidney as is partly counterpoised by its allowing the quantity retained to accumulate in the poisoned blood. In the other the diminution or increase of quantity is dictated by the azotized constituent of the food; being raised by a flesh diet, lowered by a vegetable one, and, lastly, reduced to a minimum (or dietetic *zero*) by the withholdance of all azotized food.

"Uric acid and ammonia, occurring in very small proportion[1] in healthy urine, may be estimated as together amounting to 4 per cent. of the above quantities of urea and of nitrogen.

"The salts set free from the body are far too imperfectly known, both as regards their quantity and quality, to justify any exact quantitative estimate. In respect to the skin, the sweat, which is said to contain about 1 per cent. of fixed ingredients, includes among these much chloride of sodium, and further liberates much ammonia in combination with hydrochloric and organic acids. Its sebaceous secretion seems to be chiefly margarate and oleate of soda and ammonia. Its horny, epithelial desquamation, which contains about 1 per cent. of inorganic matter, yields phosphate (and carbonate?) of lime and magnesia.[2]

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[1] According to Vogel, about 7 and 10 grains per day respectively.
[2] Anselmino in Tiedemann's Zeitschrift, Bd. ii. S. 321–342.

And even supposing the vapours or insensible perspiration to contain less of saline constituents than the composition of the liquid sweat would seem to imply, the total inorganic salts of this daily loss must amount to something considerable (50–100 grains); while its salts of ammonia presumably set free, in the liquid or solid form, a much larger proportion of this alkali than would be conjectured from that quantity of it which can be detected by the ordinary tests for this volatile alkali in the free state. The excrement probably dismisses from the body not more than 40 or 50 grains of salts daily, in addition to that larger and more insoluble saline constituent which it contains in the shape of alimentary residue. Phosphates of the earths and alkalies, sulphates, and but little chlorides, are its chief components.

"It is in the urine that we find the nearest approach to accuracy of estimate, as well as the largest items of waste, in respect to these ingredients of the bodily mass. The chief fixed salts of the urine may be regarded as setting free from the body daily about 4½ drachms of chloride of sodium, 4 of sulphates (chiefly of soda and potash), 2 of acid phosphate of soda, and 1 of phosphates of lime and magnesia.

"In addition to the preceding ingredients, however, the body evidently discharges, by every channel of excretion, other substances, only less worthy of notice in the circumstance of their smaller quantity. The albumen, epithelium, and fatty matters of the skin; the bile, mucus, and epithelium discharged from the bowels; the colouring and other extractive matters of the urine; and, lastly, the *quasi* albuminous film thrown down from the breath of animals when respiring in a confined space—all these egesta together considerably increase the total of waste, little as each may severally add to its amount. * * * *

"We may sum up our estimates of the daily bodily waste as follows:—

	Grains.
Carbonic acid	14,000
Water (8,400 of which are formed by combustion) . . .	42,000
Urea (including carbonate of ammonia 20 grains?) . .	480
Other organic constituents of the urine, namely: uric acid (8), kreatinin (7), kreatin (4½), lactic and hippuric acids (indeterminate), together about	20
Salts, { by the skin 80; " feces 50; " urine 700 }	830
	57,330

"Hence, estimating from the researches of Valentin and others, that our typical man[1] consumes about 14.570 grains of oxygen daily, the replacement of all his *egesta* would leave about 42,760 grains to be supplied by his food, *minus* those small quantities of water or oxygen which are absorbed through his skin. In other words, the maintenance of the body requires about 6 lbs. of food and drink in the course of the twenty-four hours."

The precise origin of these varied representatives of waste in the economy is a question of profound importance, and one upon which the labours of the physiological chemist have as yet cast but an uncertain light. Thanks, however, to the investigations of Spallanzani, W. Edwards, Marchand, Vierordt, Robin and Verdeil, Bernard, G. Liebig and others, we are not without some valuable information upon this subject.

The carbonic acid exhaled from the skin and lungs appears to have a threefold origin. It is generated, in all probability, not in the tissues only, but in the substance of the blood-globules, and in the lungs, in consequence of the combination of pneumic or pulmonic acid with the carbonates and bicarbonates of the blood, these being transformed into

[1] Perhaps we may find the nearest approach to accuracy in supposing these estimates to refer to a healthy male, 35 years old, 5½ feet high, and 10 stones in weight.

corresponding pneumates and carbonic acid evolved. It has not yet been satisfactorily shown that any portion of this gas is formed by the direct combustion of the carbon of the food. Its most important source seems to be the tissues, which, while they evolve it, absorb and assimilate large quantities of oxygen.

The water of the egesta is derived, in great part, from the aqueous portion of the blood; some of it comes from the various fluids of the body; some from the tissues, where it exists in a state of chemical combination, associated with different organic and saline bases; and, finally, some of it may be formed, as M. Barral thinks, and as our author maintains, by the direct union of oxygen with hydrogen, though of this there is no direct proof. On the contrary, there is reason for thinking that all the water which enters into the composition of the human organism is derived from without. The water of the ovum and the embryo, during development, is supplied at first from the mucus of the Fallopian tube, through the vitelline membrane; afterwards by the villi of the chorion; and, finally, from the maternal blood. After birth, water is furnished to the blood from the drinks and solid food introduced into the alimentary canal, and from the blood is, in part, transferred to the tissues. By measuring the quantity of fluid taken with the drink, and calculating in addition the proportion existing in the solid food, Dr. Dalton has found[1] that for a healthy adult man, the ordinary quantity of water introduced per day is a little over four and a half pounds. The researches, in another direction, of Lavoisier, Seguin, Valentin, and others, show that from a pound and a half to two pounds of water are discharged daily by the skin, a little over one pound by the exhalation from the lungs, and a little over two pounds by the urine—a quantity about equal to that taken into the body during the same period of time. In view of a fact like this, it does not appear necessary to resort to the combustive theory to account for the presence of any portion of the water contained in the human body. With regard to the generation in the animal organism of both water and carbonic acid by combustion, our author holds the following language:—

"In speaking of the formation of carbonic acid and water by the combustion of hydro-carbons in the body, it becomes necessary to qualify the sense in which such a phraseology can be usefully adopted. The chief fatty constituents of the body have a composition which may be generally regarded as answering to the formula $C_{10}H_9O$; in other words, to what would be a pure hydro-carbon, or combination of equivalent proportions of carbon and hydrogen, were it not that every tenth equivalent of the hydrogen is substituted by one of oxygen. Out of the body, all these hydro-carbons are easily made to undergo an artificial combustion, of which the chief products can be collected in the shape of carbonic acid and water. Hence, when we find that the body of a healthy male adult contains scarcely less than one-fifth or one-fourth of its weight (= about 32 lbs.) of adipose tissue diffused throughout its mass, and that the fat contained in this tissue is rapidly diminished under any circumstances which unusually tax the system; when we further find that the process of emaciation traced during life in the subcutaneous structures, can be verified by the microscope after death, and, as it were, followed through the various stages by which each fat-cell, each separate store-house, each minute bladder of lard, is emptied of its contents, so as to contain little more than serum, or even to collapse at various points of its surface into an absolute contact of its membranous cell-walls—we cannot hesitate to deduce, from the materials and products of combustion, and the evolution of heat, the actual occurrence of this process; which, by whatever

[1] Human Physiology, 2d ed. p. 54.

intermediate stages, evidently burns up the fat of the body into carbonic acid and water.

"The large proportion of fatty matter often taken in the food, together with the small proportion contained in the blood (which the greater part of the fatty aliment enters in the form of chyle), suggest that not only is fat slowly introduced into the stream of blood, but also that it is either rapidly consumed in the blood, or is soon set aside from it in the form of adipose tissue. Indeed, it is probable that both of these alternatives obtain. For example, we may estimate that the whole mass of the blood contains not more than $\frac{1}{500}$th part of all the fat stored up in the aggregate adipose tissues of the body. Hence, apart from the demands of the nervous tissues—which, whatever the quantity of fat they claim, evidently imply such an elaboration of this material as is almost a guarantee for that slowness of their waste we shall hereafter deduce from other phenomena—we might almost infer that, of the fat largely added to the blood by many kinds of food, a certain small proportion at once undergoes combustion in this fluid, while all in excess of this proportion is stored up as adipose tissue. Any further excess (which, by the way, would often be checked by the inability of the digestive organs to receive it) seems to find an intermediate destiny; a partial combustion in the shape of those oxidized fatty acids largely given off from the skin and lungs of certain animals, of man in the Arctic regions, and of dogs when fed exclusively on fatty substances.

"But can we refer these products exclusively to such a source? Certainly not. For just as the most elementary facts of a nutrition indicate that all the softer bodily tissues undergo a process of waste, and especially that the muscular substance is rapidly destroyed and renewed incidentally to its own contractile function, so a mere[1] comparison between the composition of the albuminous radicle of this tissue, and the urea which chiefly eliminates nitrogen from the body, shows that any process which converts albumen into urea must leave a large surplus of carbon and hydrogen, the ultimate destiny of which can only be accounted for by supposing their combustion to form part of the carbonic acid and water already alluded to.[2]

"Hence, while the urea dismissed from the body must in so far as regards its nitrogen, be referred to tissues containing this element: and to the various azotized tissues, in proportion to the rate at which they severally waste, whatever that rate may be; there is not one of these tissues, so far as their composition is at present known, which does not also claim to be considered as a subject of that combustion of which carbonic acid and water are the final products."

The combustion theory, originally advanced by Lavoisier, and afterwards materially modified by Liebig, has, until quite recently, been generally adopted by the medical profession as, in the main, the correct interpretation of the facts. The experiments of Dutrochet, however, upon the generation of heat in plants; those of Marchand upon the respiration of frogs in hydrogen gas; those of Regnault and Reiset upon the influence of different kinds of food upon the absorption of oxygen and evolution of carbonic acid in dogs, rabbits, and fowls; and those of Bernard upon the nervous system, have thrown great doubt upon the truthfulness of this theory, and, in conjunction with other facts, have led Lehmann, and Robin and Verdeil to criticise its inconsistencies in the most decided manner. Robin and Verdeil assure us that it is very doubtful whether any direct oxidation of carbon takes place in the body at all, and that very little, if any carbonic acid, is generated in this way.[3]

[1] Protein = $(C_{36}H_{25}N_4O_{10}+2HO)$ = 2 urea $(C_2H_4N_2O_2)+8HO+C_{32}+H_{11}$.

[2] A statement of which fact, that exercise can for a time maintain the bodily heat against extreme cold, forms an illustration as old as the arts of hunting and warfare.

[3] Traité de Chimie Anatomique, ii. 38, seq. 87, 168, 462, and iii. 185, seq.

"It was long believed," says Regnault (and many chemists still believe it), "that the heat produced by an animal in a given time is precisely equal to that which would be produced by the burning in oxygen of the same amount of carbon and hydrogen which is found in the carbonic acid and water exhaled in that time. It is very probable that animal heat is entirely produced by the chemical actions which take place in the organism, but the phenomenon is too complex to admit of our calculating it according to the quantity of oxygen consumed."[1] In relation to the formation of water in the body by direct oxidation, Bernard writes: "This question is full of interest, but has scarcely been investigated. Establishing a parallel between the chemical phenomena which take place in the living economy and those which can be produced in the laboratory, certain authors who have written upon nutrition have admitted the fixation of oxygen in the organism in a manner similar to that which takes place during combustion. * * * * The proofs of the formation of carbonic acid in living beings are abundant; but this is not the case with regard to the generation of water. This has been admitted theoretically, and as a necessary, chemical consequence of the oxidation of carbon, but the fact has not been experimentally demonstrated; indeed, the experiments which bear upon it tend to establish the contrary. * * * * The variations in the quantity of water in the blood are very well explained by the successive additions and subtractions of this element in the course of the circulation. No fact authorizes us to adopt any other explanation. It is impossible to show that any portion of this water has been formed as the result of oxidation, or by the direct combination of oxygen and hydrogen. It is well known that there are diseases—diabetes and polydipsia—in which the patients discharge enormous quantities of urine. In these cases the urine appears to be more considerable in quantity than the water ingested. Nasse undertook to determine, by a careful series of observations, whether the water taken in as drink, and contained in the solid food, would account for that eliminated by the different excretions. It appeared to him that the excretions, sometimes, separated more water than had been ingested; but he was convinced that, in these cases, the patients had misled him with regard to the nature of their regimen. Whenever this cause of error was carefully examined, he found that the quantity of water expelled was about equal to that ingested. Even in these cases, then, we have no proof of the physiological phenomenon of the formation of water in the organism—a phenomenon admitted by all the chemists. We cannot deny this result of oxidation; neither can we accept it as demonstrated, until proof shall have been furnished."[2]

After citing the experiments of Marchand to show that carbonic acid is not produced in the body by a direct process of oxidation, but in some other and more indirect mode, Dr. Dalton says this gas

"Originates, in all probability, by a decomposition of the organic ingredients of the tissues, resulting in the production of carbonic acid on the one hand, and of various other substances on the other, with which we are not yet fully acquainted; in very much the same manner as the decomposition of sugar during fermentation gives rise to alcohol on the one hand and to carbonic acid on the other. * * * * The introduction of oxygen and the exhalation of carbonic acid have no direct connection with each other, but are only the beginning and the end of a long series of continuous changes, in which all the tissues of the body successively take a part. Their relation is precisely that which exists between the food introduced through the stomach and of oxygen which is introduced through the lungs. The disintegration and decomposition of the tissues give rise, on the one hand, to urea, uric acid, &c., which are discharged with the urine, and on the other hand to carbonic acid, which is exhaled from the lungs. But the oxygen is not directly converted into carbonic acid, any more than the food is directly converted into urea and the urates."[3]

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[1] Cours Elémentaire de Chimie, ii. 868.

[2] Leçons sur les propriétés physiologiques et les altérations pathologiques des Liquides de l'Organisme, i. 441–443.

[3] Human Physiology, pp. 231 and 245.

Some idea of the retrogressive steps in the great process of tissue-metamorphosis, may be obtained from the following table, in which are enumerated some of the nitrogenized and non-nitrogenized secondary organic compounds, with the chemical formulæ expressing their composition; these formulæ, for readier comparison, being given without their basic water.

Protein $= C_{36} H_{25} N_4 O_{10} + 2HO$
Gelatine $= C_{13} H_{10} N_2 O_5$
Furnishing

Azotized substances.		*Non-azotized substances.*	
Kreatin . . .	$C_8 H_{11} N_3 O_6$	Inosite (muscle-sugar)	$C_{12} H_{12} O_{12}$
Kreatinin . . .	$C_8 H_7 N_3 O_2$	Butyric acid . . .	$C_8 H_7 O_3$
Inosinic acid . .	$C_{10} H_6 N_2 O_{10}$	Lactic acid . . .	$C_6 H_5 O_5$
Sarcosin . . .	$C_6 H_7 N O_4$	Acetic acid . . .	$C_4 H_3 O_3$
Glycin	$C_4 H_5 N O_4$	Oxalic acid . . .	$C_2 O_3$
Hippuric acid .	$C_{18} H_9 N O_6$	Carbonic acid . .	$C O_2$
Uric acid . . .	$C_{10} H_4 N_4 O_6$	Water	HO
Urea	$C_2 H_4 N_2 O_2$		

Urea 1 eq. ($C_2 H_4 N_2 O_2$) + 2 eqs. water ($H_4 O_4$) = 2 eqs. of carbonate of ammonia ($2NH_3 + 2CO_2$).

The origin of the saline matters which enter into the composition of the daily waste is shrouded in great obscurity. The source of the urea, whether it is formed originally in the blood, or in the tissues, and then transferred to the blood, is not satisfactorily known. The prevalent chemico-physiological theory, as is well known, ascribes the origin of the urea to the surplus nitrogenous food, to the disintegration of muscular tissue during active exercise, and to the waste of those contractile tissues which—like the heart, the diaphragm and the unstriped fibres of the vessels, the bowels and the integuments—are kept in incessant action by the demands of organic life. Dr. Brinton adopts this theory, and thinks that, in respect to the process by which urea is constructed out of the various tissues, there seems little reason to doubt the general accuracy of the modern doctrine, that one or more of the intermediate stages of this metamorphosis are represented by the uric acid, kreatin, kreatinin, and other azotized alkaloids discovered by Liebig. In support of this doctrine, however, he brings forward no new facts.

With regard to the salts of the egesta, all that we know is thus briefly summed up by our author:—

"That, on the whole, those which are most largely present in the blood and the tissues, are also most largely and constantly cast out from them and from the body—as are the chloride of sodium and the phosphates; that the salts formed by various vegetable acids are converted into carbonates prior to their expulsion; that an addition to the food of large quantities of the salts ordinarily voided provokes a larger expulsion of those thus added; that these saline egesta vary (as the phosphates in delirium and some brain diseases, the chloride of sodium in pneumonia) and remain uniform (as the sulphates during starvation), in circumstances for which we have no very complete explanations; these, the chief facts as yet established respecting them, throw little light upon the nature and quantity of the various saline ingredients required for the food of a healthy person."

To counteract the injurious effects of this incessant waste, the varied representatives of which have just been mentioned, food is required; and food is defined by Dr. Brinton to be all those substances which enter the alimentary canal from without the body, to be submitted to the digestive function. Looking at the subject in a broad and general manner, the constituents of

man's daily food may be said to be protein, certain hydro-carbons and hydrates of carbon, saline matters, and water. In milk—which, at one period of its life, constitutes the sole diet of the human being—these ingredients are all contained. The protein compound is here represented by the casein, the hydro-carbon by the butter or oil, the hydrate of carbon by the sugar, the salts by the chlorides, phosphates, and alkaline carbonates, the whole being dissolved or suspended in the water.

Protein, whether derived from albumen, fibrin, or casein, is perhaps the most important constituent of food. It is highly nitrogenized, as its formula ($C_{54\cdot7} + H_{8\cdot3} + N_{14\cdot2} + O_{24\cdot3} = 100$) shows, and in this respect closely resembles the solids of the organism. It enters abundantly into the composition of the blood, the plastic lymph, the muscles, and the neurine composing both the central and peripheric parts of the nervous system. There are reasons for regarding it as the source of the gelatinous tissues; while, in the fœtus, it is essential to the development and growth, as well as to the maintenance of the animal. It is, in short, as our author justly observes, "the chief substantive agent of the chemistry of life."

It is very difficult to arrive at any satisfactory estimate of the quantity of protein required for the daily maintenance of the healthy adult. Such an estimate can be obtained only by indirect and approximate calculations as to the rate of daily waste in the albuminous tissues, on the one hand, and the degree of digestibility of the proteinaceous food consumed, on the other. From the researches of Frerichs, Schwann, Bidder and Schmidt, Boussingault, Valentin, and others, it would appear that the normal diurnal waste of the albuminous compounds of the adult amount to about $\frac{1}{135}$th part of the weight of the body, or a little more than $1\frac{2}{3}$ ounces. To replace this amount of nitrogenous material, however, a much larger quantity of albuminous food is required. The daily rations of the British soldier, in home service, contain a little more than five ounces of albuminous material, in the form of 1 pound of bread and $\frac{3}{4}$ pound of meat. The daily ration in the Army of the United States is $1\frac{1}{4}$ pound of beef, $1\frac{3}{16}$ pound of bread, $1\frac{1}{4}$ ounce of sugar, $\frac{2}{3}$ ounce of coffee, and $\frac{8}{100}$ quart of beans. The new-born infant, weighing six or seven pounds, consumes daily about ten or twelve ounces of milk, containing $3\frac{1}{2}$ per cent. of casein, a quantity of protein amounting to $\frac{1}{270}$th part of its total weight. From these statements, it is evident that the nitrogenous constituent of any food must always greatly exceed that quantity which is required for the immediate repair of the organism. Much of the casein contained in the milk taken by the nursing infant, frequently passes through the alimentary canal without being absorbed into the blood. And with regard to many other varieties of food, the insoluble state of the protein-compounds actually present, afford a still greater obstacle to their absorption.

The hydro-carbons, or fats, whether derived from the vegetable or animal worlds, constitute another and an important group of aliments. Their importance is very evident from the fact that they form about a fourth or fifth of the body by weight. Of the blood, $\frac{1}{600}$th part consists of fatty matters. As this quantity is a little more than $\frac{1}{800}$th or $\frac{1}{300}$th part of the fat entering into the composition of the nervous system and stored up in the adipose cells in various parts of the body, it follows that the quantity of fat in a state of emulsion supplied to the blood by the lacteals in a given time must be small, and that it is either rapidly transformed in the blood or eliminated from it.

Next in importance to the hydro-carbons, chiefly derived from the fat of

animal food, are the hydrates of carbon, represented especially by the starch and sugar of the vegetable kingdom. The ultimate disposition in the economy of the substances composing these two alimentary groups, the changes they undergo, and the purposes fulfilled by them, though questions of the deepest physiological importance, have as yet failed to be elucidated by the laborious and conscientious efforts of the organic chemist. We know that they are less histogenetic and hæmagenetic, so to speak, than the proteinous compounds; and that, when introduced into the body, they do not reappear in the secretions, but undergo an apparently complicated process of decomposition, of the various steps of which we know almost nothing, and which results in the formation of other substances having essentially different characteristics.

The importance of the *water* of the food is such, according to Dr. Brinton, as justly to entitle it to the rank of a fourth alimentary constituent. In view of its chemico-physiological *rôle* in the economy, we are inclined, on the contrary, to consider water as the *most* important substance to be supplied with constancy and regularity. The universality of its presence in the solids and fluids of the body, the fact of its forming about four-fifths of the entire corporeal mass, the manner in which it facilitates the actions of the different organs, the influence it exerts both over the physical and vital properties of the tissues, and the essential part it plays in the wonderful acts of nutrition, exuration, and excretion, all sustain this opinion. It is well known, moreover, that the body suffers much more quickly when completely deprived of water than when the supply of solid food is withheld. Magendie, long ago, found that dogs furnished with water alone, lived from six to ten days longer than others deprived of both solid and liquid food.[1] The more recent researches of Bidder and Schmidt also show that, even after the withdrawal of all other ingesta, the copious use of water gives to the starving animal a longer duration of life.[2] The daily quantity of water required by the adult is, on the average, about 75 or 80 per cent. (or about 5 pounds) of the mixed fluid and solid food (about 6.5 pounds) which he consumes in twenty-four hours.

Another, and the last, alimentary group consists of certain inorganic matters of which the chlorides and phosphates of the alkalies, together with lime and iron, are the most important. These saline matters, when introduced into the body, undergo, for the most part, but little, if any, change. They find their way into the blood, are deposited in the tissues, and taken up and discharged again by the excretions, under their own form. Some few of them, as the malates, tartrates, citrates, &c., of the alkalies are decomposed and transformed into carbonates; small portions of the chloride of sodium and phosphate of potassa undergo a double decomposition, producing, thereby, chloride of potassium and phosphate of soda; some of the phosphate of soda, also, is transformed into biphosphate by the union of a part of its base with uric acid. It is probable, according to our author, that the sulphates are occasionally decomposed in the alimentary canal; their sulphuric acid being deoxidized into sulphuretted hydrogen, while their bases unite with the carbonic acid formed in the system.

In the general classification of alimentary constituents thus briefly passed in review, we find a clue to the composition of the principal varieties of food. For each of these constituents is represented in the different animal and

[1] Comptes Rendus, t. xiii. p. 256.
[2] Die Verdauungssæfte und der Stoffwechsel, Leipzig, 1852, S. 344.

vegetable substances consumed by man, and a mixture of these two kinds of organic matter, as our author justly observes, must unquestionably be regarded as the natural food of man.

In reference to the dietetic importance of any aliment, and the comparative value of animal and vegetable food, Dr. Brinton thus writes:—

"The influence of any special kind of food on the organism depends, not only upon its chemical, but also its physical properties; in other words, not merely on its various constituents, as capable of being shown by chemical analysis, but also on their mechanical arrangement and admixture. And it must be borne in mind that the original properties of food in both these respects are capable of being greatly modified by the operations of cookery.

"Contrasting the general characters of animal and vegetable food in these two respects, we must, on the whole, assign to the former the highest rank in the scale of dietetic value. For the tissues of one animal necessarily contain most, if not all, of those organic and inorganic substances which are required for the maintenance or construction of another; and that, too, in something like the fitting proportion of their respective ingredients. As a rule, they are also devoid of downright poisonous constituents. Besides these, they offer the equally important advantages of possessing such a structure, arrangement, and solubility as materially aid their entry into the organism. Hence they are not only much more nutritious than an equal quantity of vegetable food, and cover more completely all the details of the bodily waste, but they are also digested and assimilated with far greater ease and rapidity. It is for these reasons that the use of animal food is so much to be preferred in circumstances in which it is desirable speedily to avert any threatened exhaustion of the bodily powers.

"Against these advantages possessed by animal food we must, however, set off certain disadvantages. It contains some substances which, like the gelatinous and horny epithelial tissues, seem to be of comparatively little value for the purposes of ordinary nutrition. It doubtless includes others which are so far noxious as to require speedy excretion; as is the case with urea, and with those secondary organic compounds out of which this deleterious principle is immediately constructed. Besides, it is generally to be regarded as deficient in those non-azotized elements which are indirectly so important to the maintenance of the due combustion and heat of the body. For the mere quantity of fatty matter which it includes rarely suffices to make these hydro-carbons a proper substitute for the large starchy and sugary constituents of vegetable food; and its quality still further reduces (under all ordinary circumstances) the efficiency of this substitution. Hence for civilized man, in temperate climates, we may safely assert that no excess of proteinous or adipose tissues in the food can fully compensate the absence of the various hydrates of carbon.

"And while the main advantage of vegetable food lies in this large ingredient of hydrates of carbon, its disadvantages are equally obvious. It generally contains but a small proportion of the protein compounds. Even this limited quantity, again, is often virtually diminished by their insoluble state; or by the indigestible form which is implied by their mechanical arrangement in the vegetable tissues. Many of its starchy constituents are also rendered useless in the same way: being inclosed in hard or tough insoluble envelops, which effectually shield them from the digestive process; or having a composition which requires to be altered by a chemical process of metamorphosis before they can be fitted for absorption. It is true that some of these disadvantages may be, in great extent, obviated by the ingestion of a larger quantity of such food, as well as by a more protracted sojourn in the alimentary canal. But there is often a still more serious defect in its inorganic constituents; which, in various kinds of vegetable food, appear quite insufficient to replace the salts lost by the waste of the organism. Thus the ash of some esculent vegetables is peculiarly deficient in phosphates; that of others, in the equally important ingredients of soda and chlorides. Lastly, the poisons contained in many plants constitute another objection to vegetable diet: an objection which is, however, generally obviated by the instinct of animals, the experience of man, or the purification which the process of cooking often affords."

Having thus, in a general manner, contrasted together animal and vegetable food, Dr. Brinton next enters into a careful consideration of the chemical character, digestibility and nutritional value of syntonin, albumen, gelatin, fat and other components of the different kinds of meat or flesh ordinarily so called. He also comments very judiciously upon the dietetic value of fish, blood, brains, glands, bone, eggs, milk, cream, butter, cheese, &c. In the course of his remarks upon gelatin, a substance whose chemical position and nutritive value have been the subject of so much controversy, he takes occasion to combat the dominant opinion of the present day that gelatin is entirely devoid of all nourishing qualities. He reminds us that, in its composition, gelatin differs from protein chiefly in its smaller proportions of carbon and hydrogen; that, as regards its origin, it can scarcely have any other source, throughout the whole herbivorous division of animals, than a metamorphosis (probably regressive) of their albuminous tissues; and that, as shown by the experiments of the committees appointed by the French Academy, and the Institute at Amsterdam, gelatin is at first eaten eagerly, and for a time defers starvation. The discovery of digested gelatin in the urine, after its injection into the veins, though brought forward as a proof of its innutritious character, he thinks may be contradicted, as a fact, on the one hand, and objected to, as a deduction, on the other. For Frerichs failed to find any such elimination, and Bernard has since asserted that peptone, when injected into the systemic vessels, may be eliminated by the kidneys.

"Again, the statement of Frerichs, that the ingestion of much gelatin raises the proportion of urea in the urine, is one which, true as it undoubtedly is, no way militates against the nutritive properties of this substance; save by arguments which, carried to their legitimate conclusions, would allege the same proposition respecting albumen, the large ingestion of which is followed by a like result. There is nothing to render it impossible that part of the gelatin thus ingested is assimilated, and that the surplus only is decomposed in the blood or the nutritional fluid, to be afterwards eliminated in this form. Boussingault[1] does, indeed, distinctly find such a partial disappearance of the gelatin of ingestion from the excretions, as can only be accounted for by supposing it really applied to the enriching of the fluids, if not to the construction of the solids, of the organism."

The question of the efficacy or inefficacy of gelatin as an aliment is different from that of the tissues from which it is derived. Gelatin is an educt rather than a product, and is but a feeble and inefficient representative of the collagenic structures. These structures, according to our author, dissolve rapidly and completely in the gastric juice, and are transformed into liquids quite undistinguishable from true peptone. Cubes of solid tendon and yellow ligament, and parings of articular cartilage thus dissolve in large proportions in a natural or artificial gastric juice, and are converted into limpid, transparent solutions, which fail to exhibit the characteristic reactions of either gelatin or chondrin. In his experiments on artificial digestion, Dr. Brinton found that the chondrogenic mass (as in the elastic *ligamentum nuchæ* of the ox) dissolves more slowly, and in smaller quantity than the collagenic tissues; which are easily taken up in three or four hours, at a heat of 103° F., and in four times their weight of artificial gastric juice. The gelatinous tissues are not altogether wanting in the alimentary virtues of the protein compounds. Dogs and other carnivora have been nourished for a long time, with but little diminution of weight, or detriment

[1] Comptes Rendus, September, 1846.

to health, by means of tendon, ligament, bone, cartilage, and white and yellow fibre. Such are the principal facts brought forward by Dr. Brinton, in support of the opinion that gelatin is capable of undergoing a true assimilation, and that the tissues yielding gelatin differ from the richest and best meats, only in being digested with more slowness and difficulty, and assimilated at a corresponding disadvantage.

Our limits will not permit us to follow our author in his interesting account of the various kinds of animal food, nor can we bestow more than a passing glance at the contents of the 8th chapter, in which the varieties of vegetable food are considered in a general but clear and instructive manner. In this chapter Dr. Brinton dwells upon the importance of vegetable food in relation to national life, its value in warm climates, and the manner in which it is influenced by culture, soil, climate, age, &c. He also describes the various cereal and allied grains; comments upon their relative chemical and nutritive values, and explains, at some length, the process of bread-making. He thinks that Dr. Dauglish's method of making bread by forcing into the dough a quantity of free carbonic acid under a heavy pressure is superior to all others, since the bread thus made loses none of its starch, dextrin, or sugar, as in ordinary fermentation; and, moreover, appears to keep better. Dr. Brinton also notices, in this part of his work, the chemical composition and nutritive properties of various roots, fruits, green herbs, esculent fungi, &c. His remarks upon the potato are so just, not only in a physiological, but also in a politico-economical point of view, that we do not hesitate to transfer them to our pages. They are all the more interesting, too, in view of recent information from abroad by which we learn that, notwithstanding the horrors of starvation endured by the Irish people, they have not yet lost confidence in their favourite article of food, and are, therefore, to be again exposed to famine, in consequence of the failure of the potato crop in many counties of Ireland.

"Perhaps there is no article of food which more strongly claims the attention of the educated public, than does the potato. Certainly there is none which better illustrates the intimate causal relation between the food and the habits, the physical and the moral state of nations. Introduced into Europe from America, by Hawkins, two hundred and fifty years ago, it is only during the last one hundred years that its cultivation has assumed such enormous dimensions, as to subvert the dietetic habits of whole nations, and to accomplish a silent revolution, from which only the last few years have promised any efficient reaction. Throughout many parts of Europe, the poorer classes have now, for years past, been relying for their nutrition chiefly on the potato. And though the sturdy English sagacity of Cobbett long ago pointed out the danger of this procedure, as well as the insufficiency of this vegetable to replace those more nourishing articles of food which, in the shape of corn, &c., had been vouched by the experience of thousands of years; though, indeed, both here and abroad, his presagings could be traced in course of fulfilment, it was not until the terrible climax of the Irish famine, that the British nation became aroused to the recognition of those more casual, but not less dangerous, effects which spring from trusting to the potato as a staple of food.

"The immediate advantages of its cultivation were obvious and undeniable. With little toil or trouble, the potato extracted from the ground an amount of nourishment far surpassing that which could be obtained by the growth of wheat or any other grain. Frerichs estimates that the same surface of land would yield in potatoes twice as much protein, and four times as much starch and mineral ingredients, as if sown with wheat. Hence the cultivation of the potato over large tracts of country first gave a cheap and plentiful food; and then permitted an increase of population, up to the full limits of that extended capacity of nourishment thus acquired by a given space. This was especially

the case wherever the tenure of land implied, either its subdivision among a number of small proprietors, or (worse still) its subletting through various agents from the landlord to the cottier tenant at a rack-rent. A simple process of digging, planting, waiting and eating, replaced the perpetual foresight and labour of legitimate husbandry. And its natural results gradually attained their climax in Ireland; where might be seen a population distinguished, abroad, for undaunted industry and self-denial; but, at home, bereft of the best occupation of life, and the strongest incentives to exertion; and living in numbers unduly multiplied, upon a plant, not only precarious, but (as we can now see after the event) sure to be ultimately weakened or destroyed by the exhaustion of some of its ingredients from a continually impoverished soil.

"The above sketch of the composition of this vegetable sufficiently entitles the physiologist to range himself with the political economist, in determined opposition to the use of this vegetable by any population as their principal article of food. We may dismiss from further notice all consideration of that social and moral degradation which, ever since its introduction, have been steadily following such an undue use of the potato as the staple aliment in various parts of Europe. We may even set aside those fearful outbreaks of pestilence in Ireland which, though produced by the quantitative failure of one crop, must surely have been in some degree fostered by a peculiar state of the constitution—by a mental and physical degeneration—itself probably founded, in part, on the qualitative deficiencies of the previous food. Our objections to the potato find a better excuse in such a composition as the above. Rough as is the above estimate, it nevertheless claims to be based upon analyses of unusual number and accuracy. It shows that the food to which it refers is wanting in some of the most important saline constituents of the body: such as the phosphates,[1] sulphates, and chlorides, which are hourly leaving the organism in comparatively large quantity. And that, in addition to this grave fault, it contains so small a proportion of protein, that we may calculate about thirteen pounds of potatoes as the quantity which a man ought daily to consume, in order to replace the waste of his body by a sufficient supply of histogenic constituents in his food. At least this would be the amount of potatoes corresponding to the protein which experience shows to be enough, and not too much, for the daily ration of a soldier; that is, for the food of an adult male, in good health, and habituated to moderate, but not excessive, bodily labour. Lastly, it need hardly be added, that the form and arrangement of the protein contained in the potato are such as would scarcely ever allow it to be as well digested as the protein contained in the bread and meat of the soldier's ration. Hence its less suitable quality would require to be compensated by a still further increase of quantity. While it is altogether devoid of fat."

In the short chapter on condiments we find some interesting remarks upon the relations of these substances to food and medicine, and their influence upon the appetite, circulation, secretion, &c.

The chapters on tea and coffee and alcoholic drinks are well written, and very suggestive in both a dietetic and physiological point of view.

In these chapters Dr. Brinton takes occasion to oppose the well-known views of Boecker and others in regard to the physiological action of tea, coffee, and alcohol. He denies that they are waste-retarders (*Mauserhemmende*, or moulting-impeders), as Boecker calls them; and asserts that if we confront such an interpretation of the facts observed with the higher laws, and more exact and numerous facts of physiology, we shall find reasons for regarding such a view as erroneous. To impart vigour to the vital functions by checking metamorphosis is in flat contradiction, he thinks, to all that we know of life, for the diminution of healthy waste, is a modification which, in our own bodies, would be associated with a lowering of

[1] It may be estimated that a given weight of potatoes contain scarcely one-tenth of the phosphate of magnesia present in the same quantity of wheat.

health and activity; and which, as effected by nature (so to speak) in descending the animal scale, seems always to be brought about, says our author, at the expense of the total of life; in other words, of the quality or quantity of the collective vital functions. He appeals to the observations of Benedek,[1] as strongly confirmatory of his view, as exemplified by the urine.

Dr. Brinton's observations on the physiological action of alcoholic drinks, their influence on digestion and on health in general, are among the most valuable in the work under consideration. His opinions upon this subject are very different from the received doctrine of the schools, and are worthy of careful consideration.

His elaborate description of the process of digestion will also amply repay a careful perusal. The work, as a whole, indeed, recommends itself to the favourable notice of the physiologist and the practical physician. We have dwelt upon it at some length on account of its intrinsic merits and the importance of the subject upon which it treats. For of all the physical agents which influence the welfare of man, both in his individual capacity and social relations, food is, perhaps, the most active and general, inasmuch as it controls, very materially, the increase of population and the distribution of wealth, and consequently also the distribution of political power and social influence. J. A. M.

ART. XIII.—*The History of Medicine; Comprising a Narrative of its Progress from the Earliest Ages to the Present Time, and of the Delusions incidental to its advance from Empiricism to the dignity of a Science.* By EDWARD MERYON, M. D., F. G. S., Fellow of the Royal College of Physicians of England, late Lecturer on Comparative Anatomy at St. Thomas's Hospital, &c. &c. Volume I. London, 1861. 8vo. pp. 483.

SINCE the time of Freind, medical history has been written in almost as many different modes as general or national history. Prominent as typical works have been the *Historical Dictionary* of Eloy, the elaborate treatise of Sprengel, the concise epitome of Bostock and Alison, the philosophical disquisition of Auber, and the analytical and philosophical history of Rénouard. Dr. Meryon has commenced his work with the view of combining the narrative of facts in medical discovery with that of the progress of medical theory, and also of the prevailing delusions of different periods; so as to give a comprehensive survey of "the past history, the present state, and the future prospects of the medical profession." That such a work, giving a clear and complete history of the development of human knowledge in biology, pathology, hygiene, and therapeutics, and uniting thoroughness of research with lucidity of expression, would be a most valuable contribution to medical literature, is evident. It is not so certain, however, judging by his first volume, that Dr. Meryon is entirely qualified to attain the high standard thus set forth.

Yet, although the hope inspired by the programme announced in his

[1] Annalen der Chemie und Pharmacie, Bd. lxxvii.

introduction meets with some disappointment in the perusal of the volume, if it were read without reference to any critical ideal, none could fail to find it a very interesting book. Dr. Meryon's style is easy and mostly agreeable. Only now and then we meet with lapses in diction which indicate an unequal degree of solicitude in the composition and correction of the work. As to narrative, a similar remark may be made. Generally accurate in statement, and sufficiently full in reference to authorities, unaccountable oversights occur in a few instances, and decided inequality exists in the completeness with which apparently equivalent topics are treated.

A serious defect in the book, considered as a manual for the study of the physician, or even for the instruction and entertainment of the general reader, is its manner of arrangement. Perhaps it should rather be said the *absence* of systematic arrangement. A chronological order of succession is generally observed, it is true. But the history of medical and pseudo-medical philosophies, of discoveries and diseases, is so intermingled through the volume as to produce a feeling of entanglement. Thus, early in the sixth chapter, we are brought into the company of Raymond Lully, Peter Woulfe, and even Lavoisier; while in the middle of the eighth occurs a discussion of the anatomical knowledge of Hippocrates, Aristotle, Erasistratus, and Herophilus. Linacre and Caius commence, with equal formality, the eighth and twelfth chapters. The whole of the ninth chapter is occupied with Paracelsus and Paré; while more than twenty pages of the tenth are filled with an account of popular delusions of the sixteenth century, having no direct relationship to medicine. Doubtless these furnish agreeable reading; but their space cannot very well be spared in a volume which, in less than 500 pages, brings us to the close of the sixteenth century.

Lesser errors it is, of course, an ungrateful task to point out; but some are too striking to be overlooked. Thus, three times on the same page (p. 54), Dr. Meryon ascribes to Plato the assertion that the Romans excluded physicians from their city for the first six hundred years of their history; a declaration which could only have been made, whether true or false, some two centuries after Plato's death. At the end of the same chapter he shows (p. 62), what would otherwise be obvious, that it was Pliny and Cato who were running in his mind, and thus induced the *lapsus pennæ*. With similar carelessness he has, four times in one chapter, and twice on one page (p. 211), written Herder for Hecker, the historian of epidemics of the middle ages.

Dr. Meryon's considerable list of *errata* might have been extended by the correction of a few grammatical oversights, such as "the tone of quiet sarcasm * * * impress," &c. (p. 185); "the precise data * * * is wanting" (p. 304); "the nature of which were in some degree understood," &c. (p. 428). Inelegance, at least, must be predicated of such phrases as "patience and perseverance pushed on to genius;" "an extraordinary memory, whereby he acquired an encyclopædic intellect;" "an indubious foundation;" or, worse, "irresistible foundation of medical science." Can any one discover the meaning of the following sentence?

"The exploded theories, however, are both interesting and useful; for the same form of reasoning is so deeply rooted in us as it is in all men who have to deal with phenomena in which artificial experiments have a very limited range, that we may set forth its insufficiency for the expression of a sentiment as well as for the exhibition of the practically mischievous tendency of such reasoning, unless there be a clear perception of the object to be aimed at, and a systematic means used in the right direction for its attainment."—P. 330.

Leaving these, however, which might be the nods even of "bonus Homerus," the more essential qualities of the book remain to be considered. We have to express the opinion that Dr. Meryon's reading has been more extensive than discriminating. He appears to us to lack philosophic judgment. Not wishing to assert this too dogmatically, it will probably be more profitable for us to bring into question a few of his statements and opinions than it would be to attempt an analysis or abstract of the contents of the whole volume.

Upon the subject of the origin and infancy of medicine, Dr. Meryon is not alone in passing lightly over the claims of the Egyptians. Yet, as Homer shows in the Odyssey, their priest-physicians had not only an early but a great reputation. Herodotus says that many foreigners resorted to Egypt for drugs as well as for wines, and that both Cyrus and Darius sent thither for medical men. Whether the Hermetic books were really of great antiquity or not, there seems to be little or no doubt that Athothes, the second King of Egypt, wrote on Anatomy. Esculapius, if a real personage at all, was probably Phœnician or Egyptian.[1] The Egyptians were, also, the earliest apothecaries. Chevalier Bunsen is authority for the derivation of the word Chemistry[2] from Khemi, the land of Kham or Ham. The *balance*, the introduction of which is ascribed by Dr. Meryon in one part of his book to Lavoisier, and in another to Van Helmont, was well known to the Egyptians, as may be seen by the paintings upon the walls of their ancient tombs; and in metallurgy and colour-making they were certainly adepts. More remarkably, some of the signs used by physicians now in writing prescriptions (especially ℈ and ʒ), bear considerable resemblance to Hieratic Egyptian numerals;[3] having probably been transmitted through the Arabians.

Grecian medicine is introduced by Dr. Meryon with a "cursory sketch" of the philosophic systems, and their influence upon medical opinion and progress. Platonism is especially depreciated. In a later part of the volume (p. 224) it is said, that "by its characteristic doctrine of ideas, independent of the objects which those ideas represent, it contributed less to improve than to corrupt the human understanding." Even in a work which only incidentally touches upon philosophy, this appears to be a harsh manner of disposing of him who has been called "the high priest of reason." The Timæus, which is quoted by Dr. Meryon, was almost certainly not meant by Plato as a final or perfect physical system, but as only hypothetical and provisional.[4] It was, in fact, "a physical romance with a mighty moral." Aristotle, although much more of a naturalist than Plato, was also a teleologist; and by his dogma that the right course of observation and investigation proceeds from the whole or universal to the particular or individual, he did more to retard the advance of science beyond his own acquisitions than did Plato with all his ideology and dialectics.

Dr. Meryon seems to us no more happy in his allusion to Socrates (p. 58) as having "introduced the first stage of that sensual philosophy, which acquired the data for its perfect development in the seventeenth century by

[1] Le Clerc, Hist. De La Médecine, p. 22.

[2] Ascribed by others, with less probability, to χυμος, juice.

[3] See Champollion's Grammar, pp. 213 and 220.

[4] Plato disclaimed the responsibility of the opinions in Timæus, by speaking not through Socrates, the usual exponent of his own views, but through a stranger and Pythagorean. Lect. on Hist. of Ancient Philosophy, by W. Archer Butler, vol. ii. p. 186.

the combined efforts of Bacon and Locke." At least, a learned authority[1] has directly *contrasted* Socrates and Bacon, in that "Bacon conducted science into the world of matter, while Socrates led her into the heart and actions of man."

In summing up, at a later period, the results of the labours of the two ancient sects of dogmatists and empiricists, our author decides that the balance is greatly in favour of the former; most of the successive discoveries of facts which advanced medical science, down to the time of Paulus Ægineta, having been associated with the names of the dogmatists and their allies.

We perceive with pleasure that Dr. Meryon makes frequent reference, in different parts of his book, to the excellent Discourse on the Medical Profession of Ancient Times, of Dr. Watson, of New York, and to the History of Epidemics, of Noah Webster, LL. D.; a pleasure not lessened by the fact, that such reference to transatlantic authorship is apt to be rare and reluctant among British writers upon medical and general science.

In his chapter on "the Healing Art as it existed in Ancient Rome" (chap. iii), our author, following Drelincourt, denies the truth of Pliny's assertion, that physicians were excluded from Rome for six hundred years. The most positive evidence upon this point is quoted by Le Clerc, from Dionysius of Halicarnassus, who states that in the plague of CCI A. U. C., "the *physicians did not suffice* for the number of the sick." This was more than two centuries before the time of Archagathus, who was said by Pliny to have introduced the profession of medicine into Rome. That the art remained in its lowest state, however, and miserably cumbered by the grossest superstitions, until the time of the Cæsars, there appears to be no doubt. The medical science of Rome was essentially Greek in origin.

However absurd may seem Cato's reason for denouncing the Greek physicians, that he suspected them of a design to poison all barbarians (including Romans), the expulsion of the Greeks from Italy, at a later period, must certainly have included the medical practitioners. Dr. Meryon does not discuss this question, but implies a negative. Sprengel does not settle it. Evidently, however, Pliny[2] distinctly mentions their expulsion, although his language has been held to bear a different interpretation.

We cannot pass by Dr. Meryon's quite unnecessary ascription, in his 4th chapter (pp. 67 and 70), of an unfavourable influence upon medicine to the *introduction* of Christianity. If anything less than this, apart from the monkish *corruptions* of the dark ages, is meant, his language upon that topic is not well chosen. His account of Celsus, Galen, Oribasius, Alexander Trallianus, and other celebrities of the early Christian centuries, is sufficiently full and interesting.

At the opening of the chapter upon the Saracenic school of medicine (chap. v.), Dr. Meryon adopts the current tradition, of the destruction of the Alexandrian Library by the command of the caliph Omar; modified by the statement (on the authority of Portal and Amoreux), that its medical books were designedly saved from the flames. A reviewer of Dr. Meryon's book[3] insists that the whole legend has been disproved. We do

[1] W. Archer Butler, op. citat., vol. i. p. 353.

[2] Hist. Nat. xxix, c. 8, the passage is "et cum Græcos Italiâ pellerent, diu post Catonem, excepisse medicos." Some consider "excepisse" to indicate the *exemption* of physicians from banishment; but the context very clearly shows that Pliny meant that they were specially *marked* or *selected* for expulsion.

[3] Brit. and For. Medico-Chirurg. Rev., Oct. 1861.

not find this, however, to be admitted by so careful a writer as Wilkinson, who considers the tradition to be sufficiently sustained by evidence given by Makrizi, Abdal-latif, and other Arabian authors, cited by De Sacy. We are obliged to differ from Dr. Meryon upon so many points, that it is agreeable to find him right whenever it is possible.

His estimate of the merit of the Arabians does not satisfy us, however, more fully than did that of their predecessors the Egyptians. After giving to them, wrongfully, the credit of the origination of chemistry (p. 123), he attributes all the celebrity of the Arabians to "the ignorant and superstitious condition of Europe from the seventh to the twelfth or thirteenth century, and not to any original and independent literature." Although what literature they had was mostly derived from the Greeks, yet their chemical proficiency must have been considerable, and their contributions to the materia medica and pharmacy of the profession more than respectable, for their age. It should be looked upon as a matter of course, and as no ground of reproach, that "their random manipulations were very different things from the systematic experiments of the present day" (p. 143). It is certainly a significant fact, that our language retains to the present time so many chemical and pharmaceutical terms of undoubted Arabian origin; as *alkali, alcohol, julep, elixir, syrup, sugar, naphtha, camphor, amber, bezoar, gum arabic, alembic, mattress, jar.*[1] Bostock[2] admits that the Saracens introduced into Europe, rhubarb, tamarinds, cassia, manna, senna, camphor, various gums, resins and aromatics. Gmelin (as quoted by our author) gives them the honour of having forestalled Paracelsus in the administration of corrosive sublimate as a medicine. If we add to this, that they were the first to give any consistent account of smallpox and measles,[3] their claim to the respect of the reader of medical history would seem to be made out; and their empire of 800 years can hardly with propriety be termed "unfruitful."

A similar depreciation of the value of the incidental results of the labours of the alchemists occurs in Dr. Meryon's next chapter (chap. vi.). His language on this subject is simply contradictory; asserting that, by their researches "the progress of chemical science was in no degree advanced" (p. 158), although he had previously mentioned their "discovery of many most important chemical compounds, as well as of many most valuable medicinal agents;" and afterwards speaks of the debt due to alchemy "for the familiarity which it engendered with many natural substances, and still more for the *insight which it gave into their composition.*" The Italics are ours.

The history of the school of Salerno, in which, in the eleventh century, the first medical diploma was conferred, is instructively narrated in the same chapter. Among other interesting facts, it is stated that Sybil, wife of Robert, Duke of Normandy, saved his life against his consent, by sucking, during his sleep, a wound inflicted by a poisoned arrow. Nor was Sybil the only lady practitioner of Salerno; at which females were admitted as students of medicine. Hæser records the names of five who were distinguished; Constantia Calenda being the most celebrated of them all. In the same century, the Abbess Hildegarde, of Rupertsberg, attained a like reputation. A reference to these, as well as to Paula, the friend of St. Jerome, who founded the first hospital for the sick at Rome, has now an

[1] Trench, on English, Past and Present.
[2] Hist. of Med., p. 112.
[3] See Gibbon's History, vol. x. chap. 53.

interest, especially to those who seek to revive in modern schools of medicine the Salernian privilege of the sex. It is not easy to see, however, any argumentative or authoritative force in a precedent, whose duration was so temporary, and whose substantial results, honourable as they were in exceptional cases, were still so few. Rather may we observe in it an illustration of the truism, that men are liable to similar errors and experiments in all ages; as the vendor of patent nostrums may take delight in remembering that Galen paid high prices for secret remedial preparations, and that Alexander of Tralles was, with considerable learning, a good deal of a quack.

Another extraordinary oversight appears to us to have been committed by our author, in speaking of the "impulse" communicated to medicine as well as to other physical sciences by Roger Bacon, as "not a healthy one" (p. 187). But, as the merit of this great philosopher, in anticipating, to a considerable extent, the inductive method of Lord Bacon, needs from us no defence, we may pass to more strictly medical topics.

A number of pages in the 6th chapter (whose subject is the "Progress of Medicine, and its Vicissitudes, from the 7th to the 15th Century") are occupied with an account of destructive diseases of the thirteenth and fourteenth centuries; particularly scurvy and the black death. Chapter vii. has for its title the "Progress of Medicine during the Fifteenth Century." The controversy between the advocates of revulsion and derivation, the sweating sickness, the origin of syphilis, and the tribulations of the barber-chirurgeons, successively occupy the author's attention. We will pause only upon one of these topics; that of the outbreak of syphilis in Europe, near the end of the fifteenth century.

It is certainly a matter of surprise that Dr. Meryon, after considerable reference to authorities, should accept the view, that syphilis was imported from the West Indies by Columbus and his followers. Whether the "morbus Gallicus vel Neapolitanus," which affected the army of Charles VIII., at the siege of Naples, in 1495, was really the disease now known as syphilis or not, remains somewhat doubtful. It was at least more violent and dangerous than the primary syphilis of the present day. Von Hutten, A. T. Petronius, and Tomitani[1] assert that it either disappeared or changed its character very much within a few years from the time of its appearance. That this does not disprove its identity with our "lues venerea," must be admitted by those only who grant that, as Dr. Fergusson[2] and others aver, the latter disease is now essentially modified in severity and curability by climatic and other contingencies.

If, however, the identity of the Neapolitan malady with syphilis were assumed, there would still be a manifest deficiency in the historical evidence as to its origin. A decree of the Parliament of Paris, dated 1496,[3] is recorded, in which the disease is mentioned as having been prevalent in that city for two years; while the conquest of Naples was not effected until 1495. Fallopius, indeed, is quoted by our author as showing how, naturally, each nation was anxious to thrust the generation of the loathsome contagion upon another: "Itali Gallicum morbum vocant; Galli scabiem, vel morbum Italicum, vocant; vocant quinetiam Hispanicam scabiem, quoniam affectus ab Hispanis communicatus est Germanis." At last,

[1] Dict. of Pract. Surgery, by S. Cooper, N. Y. ed., p. 439.
[2] On the Diseases of the British Army in Portugal; Med. and Chirurg. Trans., vol. iv. pp. 1, 2.
[3] S. Cooper, *op. citat.*, p. 437.

it seems, they all agreed to fasten the odium upon the undefended nations of the newly-discovered West.

This ascription, as a scientific theory, we must agree with Hunter, Sprengel and Cooper, in rejecting. Other hypotheses, of greater or less plausibility, are not wanting. The most absurd has been revived by Ricord, having been proposed by Van Helmont: that syphilis is the result of the transmission of glanders from the horse to the human subject. Much more doubt rests upon the existence or non-existence of a relationship between the ancient leprosy and syphilis. Very many writers have noticed the coincidence between the subsidence of leprosy in Europe, in the fifteenth century, and the appearance and extension of syphilis.[1] *Imprimis*, this does not look like a genetic connection between them. But, the doubt grows out of the imperfection of the record. *What was* the ancient leprosy? This is difficult to determine.

The most considerable prevalence of a disease which has, traditionally, been considered as leprous, and of which we have a clear recent account, is on the western coast of Norway. Special hospitals there exist for its treatment; and the *spedalsked*, as it is called, may probably be a remnant of the tubercular leprosy of the middle ages, as that may have been of the elephantiasis of Aretæus. Spedalsked is on the increase in Norway; the whole number of cases known having been but 659 in 1836, but nearly 2,000 in 1858.[2] The elaborate investigation of its localities and history has, however, convinced the medical men of that country that its causation is there chiefly connected with the hardships and miseries of the deep sea fisheries in winter. We must look elsewhere for anything like proof of a direct association with syphilis.

A lively discussion upon this subject between Drs. Simon and Lindwurm, of Hamburg, published a year or two since,[3] has elicited the conclusions, that impure connection has been by some early writers adduced as a cause of leprosy; that many symptoms of the latter closely resemble secondary or tertiary syphilis; and that both ancient and modern physicians speak of the transition of lues venerea into leprosy. Scherlievo, falcadina, sibbens, yaws, radesyge, &c., are so affiliated. Upon these conclusions as to fact, two directly opposite theories have been founded: the one, that leprosy was constitutional or secondary syphilis; the other, that syphilis is the product of sexual commerce between persons one of whom had leprosy affecting the genital organs. The former is the most inviting hypothesis. It is easy to imagine the protracted non-discovery of the causal connection between a local ulcerative disease and a cutaneous or constitutional disorder supervening sometimes many weeks or months after the cure of the local affection. But, without dilating too long upon this question, the facts may be said to lean more in favour of the causative action of the leprous affection. The mingling of nationalities during the expedition of the French to Naples, in 1494–'95, aided by very bad morality, may have afforded the opportunity for this extraordinary pathogenesis.

[1] Rénouard says, however, that William De Salicet, in the 13th century, described bubos resulting from impure coition, and that Lanfranc, of the same period, gave a clear account of contagious ulcers of the genitals.—Rén., *Hist. of Med.*, translated by Comegys, p. 344.

[2] Spedalsk Disease; its Cause and Means of Prevention, by D. C. Danielssen, M.D.; cited in Brit. and For. Med.-Chir. Rev., April, 1858. Prof. Virchow, of Berlin, is said to be now engaged upon a work on the History of Leprosy.

[3] See Brit. and For. Med.-Chirurg. Rev., Jan. 1861.

At the same time, all these reasonings are very speculative. There is quite as much, or more, probability in the view that, as crowd-poison produces typhus, and foul hospital air erysipelas, so filthy promiscuous sexual intercourse may have begotten, and may forever beget, the venereal contagion. The only fact we have met with that seems to conflict with this simple theory is, that, as stated by Dr. Pickering,[1] the Hawaiian Islanders, while they are decidedly the most licentious of the Polynesians, having "really an approach to promiscuous intercourse," yet exhibit "fewer external marks of disease than those of any other group." Loss of the nose, especially, which he had seen often on other islands, the same writer mentions as being scarcely met with there.

The best part of Dr. Meryon's book is his eighth chapter, "on the principal anatomists of the sixteenth century." It opens with a good account of Thomas Linacre, founder of the Royal College of Physicians of London, and of the important influence upon European science exerted by the Humanists, including Linacre, Leonicenus, Koch, Gonthier, and Cornarus, as well as Erasmus, Melancthon and others. After the labours of the first practical or demonstrative anatomists, Mundinus, Zerbi, Achillinus and Bérenger de Carpi have been briefly considered, the progressive discoveries in the anatomy and physiology of the apparatus of the circulation are taken up. Our author assigns the credit of the earliest discovery of valves in the veins to Charles Etienne, of Paris; and in this he does not merely follow the authority of Cruveilhier, but makes reference to the work of Etienne himself, published in 1536. Although the vena portæ is spoken of in this work as having veins, the context shows that the vena hepatica was really meant. The valves of the veins in the extremities, and of the external jugular, having been announced by Sylvius, in 1540, and that of the termination of the vena azygos by Cannanus and Amatus, in 1551, the claim, made by himself and sustained by Harvey, on behalf of Fabricius ab Aquapendente, is allowed to fall to the ground. It is hard for us now to realize the fact that such eminent anatomists as Vesalius, Fallopius and Eustachius should persist in denying the existence of venous valves after their discovery: especially as Vesalius himself did such a signal service to the progress of science, by disproving the ancient theory of the perforation of the wall between the two ventricles of the heart, in the face of the almost sacred authority of Galen; and therefore at the risk of martyrdom.

Servetus, who was a martyr in reality, although not in the cause of science, undoubtedly apprehended the course of the pulmonary circulation; although as a happy conjecture rather than a demonstration. The same is properly said of its "rediscovery" by Realdus Columbus; and of the more striking expressions of Cæsalpinus, the botanist, showing that he conceived the idea of the general or somatic circulation also. Neither of these observers was consistent in his statements, and neither of them formed any notion of the unity or homogeneity of the blood, or of the importance of the heart as a propelling organ.

A more formidable claim is maintained by Dr. Meryon, for the original and prior discovery of the circulation, as expounded by Harvey, by Fra Paolo Sarpi, a Servite monk of Venice, who studied anatomy (with other sciences) at Mantua, about 1570, under Fabricius. To make a long story

[1] The Races of Man, &c., by C. Pickering, M. D., Member of the U. S. Exploring Expedition; Bohn's ed., pp. 91, 97.

short, the evidence is this: Veslingius, an anatomist of high reputation of Padua, asserts in his work entitled *Syntagma Anatomicum*, that he had seen a manuscript of Sarpi's, preserved secretly by his friend Fulgenzio (the secresy being accounted for by fear of the Inquisition), in which the general circulation, as afterwards taught by Harvey, was clearly set forth. T. Bartholin, of Copenhagen, and Waley, of Leyden, very important contemporary authorities, accepted this as truth, and considered that the Venetian monk had anticipated Harvey. Waley even insisted that Harvey was indebted for his knowledge upon the subject to information of Sarpi's discovery, received through Fabricius.

On the other hand, Harvey, and Bauhin of Basle, a pupil of Fabricius, deny all this. Dr., afterwards Sir George Ent, President of the Royal College of Physicians, an intimate friend of Harvey, published a defence of the latter as the sole discoverer of the circulation, against all other claimants. In treating of Fra Paolo Sarpi, Ent admits the testimony of Veslingius and Peiresc, as to the knowledge of the circulation by Sarpi; but he accounts for it through the transmission to Venice of a copy of Harvey's work, which the latter presented to the Venetian Ambassador at London. Eloy, in his *Dictionnaire Historique* (art. Harvey), adopts the argument and conclusion of Ent;[1] but, curiously enough (as we have found by direct reference), under the article "Sarpi," he gives the correct account of the death of the latter, as stated by Dr. Meryon, in 1623, *five years before Harvey's book was published.* It is obvious, therefore, that Ent's explanation of Sarpi's knowledge is quite untenable; and, since he admits (as quoted by Dr. Meryon) that that knowledge included the true view of the circulation, it is difficult to evade the proof of Sarpi's originality.

As, however, Harvey was too ingenuous to have pretended to a discovery which he knew to be the property of another—and as, moreover, the supposition that he received Sarpi's account of the circulation through his preceptor Fabricius is contradicted by the total absence of evidence of the possession of any such knowledge, in advance of Harvey, by Fabricius himself, we cannot doubt the entire independence of Harvey's investigations, reasonings, and demonstrations. The award of a share of similar honour to the Venetian ecclesiastic (who was undoubtedly an extraordinary man), even if much more fully sustained by extant documentary evidence than it is, could detract nothing from Harvey's glory. Properly, his name will forever remain associated with this department of anatomy and physiology, as its noblest exemplar.

As our author had, notwithstanding the title of his chapter, already entered upon the seventeenth century by the discussion of this subject, it is a matter of regret that he did not, before leaving Harvey, refer also to the great and prolonged opposition which his discovery met with before it was established as a part of science. We apprehend that there is much instruction to the student of human nature as well as of medicine, in the facts—to which Dr. Meryon makes no allusion—that his views were at first "rejected almost universally;"[2] that they were not accepted in any faculty in Europe before 1650, their first admission beyond the Alps having been made by Trullius, a Roman professor, in 1651; that even their ocular demonstration failed to satisfy the distinguished Caspar Hoffman, professor at Nuremberg,

[1] Dr. R. Willis, in his Life of Harvey (Syd. Soc. Series), also follows Ent. Portal (Hist. De L'Anatomie, &c.) denies Sarpi's claim, but without analyzing the evidence.

[2] Life of W. Harvey, by R. Willis. Syd. Soc. Series.

whose puerile objections, in his own amphitheatre, so disgusted Harvey that he laid down the scalpel and left the room; and that, twenty years after the publication of the great discovery, Riolan, of Paris, one of the first anatomists of the age, published a formal attempt at its refutation.[1] It is also a curious piece of scientific history, that Harvey himself was unable to be convinced of the existence or nature of the lacteals, discovered contemporaneously by Asellius,[2] or of the chylous receptacle and thoracic duct, first thoroughly made known by Pecquet, in 1647.

The pages in which Dr. Meryon continues his history of the anatomists and anatomical discoveries of the sixteenth century are full of interesting matter, which our space will not allow us to analyze. At the close of this chapter, he gives a summary of the nationalities of the noted anatomists of that period, as follows: 111 Italians; 66 French; 41 German; 24 Spanish; 13 English; 7 Dutch; 4 Portuguese; 3 Swiss; 1 Polish; and 1 Danish. One further remark in connection with the same topic may be allowed us. Dr. Meryon's citations upon the true authorship of many discoveries in anatomy tend to lessen the weight of the only valid argument in favour of the arbitrary nomenclature now in vogue; since they show that the names of parts are often given in honour of others than their first observers. Thus, Zerbi is said to have forestalled the discovery of the Fallopian tubes; Achillinus that of the Whartonian ducts of the submaxillary glands; Vidus Vidius, of the corpora Arantii; Galen knew of the foramen of Botal; and Vesalius and Fallopius preceded De Graaf in the observation of the vesicles which have received his name. Portal states further, that Waley was the true discoverer of the capsule of Glisson.[3] In surgery, likewise, Dr. Meryon mentions that Taliacotius was anticipated in plastic operations, in the fifteenth century, by Vincent Vianeus. This credit is given by Portal[4] also to Brancas, who, as well as his son, as early as 1442, thus restored injured ears and lips; the improvement of Vianeus extending to operations upon the nose.

We have already named some of the subjects of the ninth and tenth chapters of the book before us, which must be passed over now without remark. The same is also necessary with Chapter XI., which is upon "Secret Poisoning and Medical Jurisprudence; Monograms and their Influence on the Pathological Anatomy of the Sixteenth Century; Surgery." The volume closes with the twelfth chapter, upon "Medicine and Surgery in England during the Sixteenth Century," and a short sketch of the "Rosicrucians." We cannot help thinking that the former of these subjects might, to advantage, have been worked up more fully even if the latter had been omitted to make room for it.

Our author's nearest approach to an aphoristic form of statement occurs in his last chapter, in a *résumé* of the most important errors of the physi-

[1] The most distinguished and persistent opponents of Harvey's doctrine were Riolan, Hoffman, and Veslingius, besides the less learned Primerose and Parisanus. Its earliest public advocate was Drake, who defended it in an inaugural thesis; it was afterwards supported by Waley, Leroy, Rolfink, Descartes and Ent, before its general adoption.

[2] Although not altogether unknown to Erasistratus and Galen, Portal (Hist. de l'Anat., &c., vol. ii. p. 453) is authority for the statement of Harvey's antagonism to Asellius's demonstrations, and Rénouard (Hist. of Med., trans. by Comegys, p. 391) for that of his refusal to admit those of Pecquet.

[3] Hist. de l'Anat., &c., vol. ii. p. 609.

[4] Op. citat., p. 169; art. Taliacot.

cians of the times of Caius and Bulleyn. These errors, as he asserts, are such as we, also, are called upon to guard against at the present day—

"1st. That physicians submitted themselves to a position of undue dependence on the opinions and dogmas of others.

"2d. That rare and exceptional cases were the great objects of pursuit, whilst those of common occurrence were unjustly neglected.

"3d. That special facts in pathology, as suggestive of treatment, were comparatively disregarded.

"4th. That credulity and superstition still prevailed."—Pp. 460, &c.

Concluding his account of the "Fraternitas Rosæ-crucis" with some general remarks, Dr. Meryon gives his view of the principal lesson of medical history, down to the beginning of the seventeenth century, in language which, as we have so far quoted him but sparingly, may be cited in full—

"A host of enthusiasts followed in the wake of Andreæ; and many empirics, adapting themselves to all times and to all circumstances, found, in his flight of fancy, a source of wealth too advantageous to be neglected.

"It is to this latter fact that I would more particularly direct the attention of my readers, and to the probable cause, as the foregoing history appears to be evidence, of the propagation of quackery, notwithstanding discoveries in anatomy and physiology which would seem to make this plague-spot an impossibility. I would appeal to its existence, however, as well as to medical polemics, as proofs that there was, as there is still, something defective both in teaching and acquiring the knowledge of medicine.

"It is a branch of human learning in which a greater freedom of discussion has been permitted throughout all ages than in any other department of human thought, and a corresponding variety of opinions has been the result. The Methodists, the Pneumatists, the Galenists, nay, even the Sceptics, and other sects and schools, retained their respective representatives up to the period of which we are treating; there was no principle from which to proceed in medical education; and as every dogma possessed certain elements of truth, the credence which all received impressed on medicine an aspect of confusion. To this, and this alone, may be attributed the scepticism which many pragmatical men professed to entertain in relation to the efficacy of the resources of physicians, and hence the charlatan found his success, not only in the ignorance of unbelief but also in the heterodoxy of discordant opinions.

"Now it is because we recognize in the anatomical discoveries of Aristotle and Galen, and still more in those of the anatomists of the sixteenth century, the elements of a science which every student of medicine, whatsoever his creed may be, *must* bow to, that I have undertaken to record those remarkable instances of the explanation of the laws of causation which subsist in the complex phenomena of life; whereby we are brought nearer and nearer towards the comprehension of those ulterior phenomena of disease, and the action of their remedial agents.

"If the phenomena of life are to constitute the solid and irresistible foundation of medical *science*, it is obvious that they must not be made subservient to every conflicting tenet; but, on the contrary, that they must be isolated from the art, and studied abstractedly, so as to impress on the science which they constitute an original and independent character.

"Being thus established on the immutable laws of nature, and irrespective of any immediate application, biology must of necessity supply the principle by which all medical speculations must be tested, and by which all antagonistic opinions must be judged.

"How far these views have been, and now are being fulfilled, will form the subject of the succeeding volume."—Pp. 467—469.

There is not, in these didactic sentences, such transparency of language that we can feel certain of apprehending the author's exact meaning.

But, it appears to us, that he designs to reverse, to no advantage, the *dictum* of Celsus,[1] that "Medicine ought to be rational; but to draw its methods from the *evident* causes; all the obscure being removed, not from the attention of the artist, but from the practice of the art."

If Dr. Meryon means to urge that biology must be studied as an accurate and demonstrative science, unclouded by medico-scholastic reveries or dogmas, he is, so far, right. If he would insist further, only, that all medical *speculations* must be tested by biological principles, this, too, may be conceded. But, while we grant that medical science can never attain perfection until made thoroughly rational by the knowledge of all the laws of life, in health and disease, and under the influence of all morbid and remedial agencies, yet we cannot admit that an elementary and imperfect physiology, or a crude pathology, should have the prerogative of unquestioned autocracy in medicine, or even of judging all antagonistic therapeutical opinions.

In a word, we prefer, to the medical philosophy of Dr. Meryon, as above announced, that of Rénouard; who believes and labours to prove that the facts of clinical observation and therapeutical experience constitute as legitimate materials for science as any others; and that, while waiting for the gradual maturing of biology, and accepting from it in its past and present state only suggestions, not rules of action, the art of medical practice finds its safest basis in *methodical and rational empiricism.*

We must now conclude our remarks upon Dr. Meryon's book, by merely mentioning his appendix; in which there are interesting although not absolutely complete chronological tables of "the principal epidemics of the sixteenth century," and of "special facts, contributing to the science of medicine." The opinion must be repeated, that, while the volume we have been considering contains a great deal of agreeable and instructive reading, yet, as a History of Medicine, it can hardly be accepted by the profession as fulfilling all its requirements. For those who have leisure to study it, the work of Sprengel must yet remain without a substitute; while, for philosophic sagacity and soundness, as well as for skill in the grouping of facts and events, that of Rénouard merits, perhaps, a still higher appreciation than it has received. H. H.

[1] Treatise on Medicine. See Watson's Med. Profession in Ancient Times, p. 117.

BIBLIOGRAPHICAL NOTICES.

ART. XIV.—*Transactions of State Medical Societies:—*

1. *Tenth Annual Meeting of the Illinois State Medical Society, held in Paris,* May 8 and 9, 1860. 8vo. pp. 226. Chicago, 1860.
2. *Transactions of the State Medical Society of Indiana at its Twelfth Annual Session, held in the City of Indianapolis,* May 21 and 22, 1861. 8vo. pp. 56. Indianapolis, 1861.
3. *Transactions of the Medical Society of New Jersey,* 1861. Ninety-fifth Annual Meeting. 8vo. pp. 115. New York, 1861.

1. The *Transactions of the Tenth Annual Meeting of the Illinois State Medical Society* open with *an occasional address* delivered before the members of the society and the citizens of Paris, Edgar County, Ill., by Dr. N. S. DAVIS, of Chicago.

The subject of this address is "*the mutual relations and consequent mutual duties of the medical profession and the community.*" The interest and importance of his subject have been duly estimated by Dr. D., who has treated it throughout with no small ability.

The subject of the *valedictory address* of the president, Dr. David Prince, of Jacksonville, which follows, is on the injustice to which medical men are constantly subjected by the verdict passed upon them by the community amid which they practise, and by the legal tribunals before whom they may be accused because of their failure in cases where success was rendered impossible by circumstances over which they had no possible control.

In the conclusion of his address Dr. P. offers some suggestions with the view to remedy, to some extent at least, the defects in our jurisprudence with reference to jury trials in cases of accusation for alleged malpractice against, more especially, physicians and surgeons.

The two leading suggestions to this end are, 1st. That in every case in which the rendering of a correct verdict requires, on the part of the jurors by whom it is tried, a degree of familiarity with any particular art or science which is not commonly possessed by that class of persons of whom juries are necessarily in great part composed, the reference of the trial and decision of the points at issue to individuals who have had such a special education or training as shall enable them to understand fully the merits of the case and to render a just and equitable judgment. This arrangement, it is believed, would diminish the necessity for testimony on the part of experts. Testimony which it is often difficult to procure in person, and always imperfect and unsatisfactory when obtained by deposition.

The second suggestion is, to give to any party who believes himself aggrieved by the finding of a jury of a lower court, in an accusation for malpractice in any particular art, profession, or calling, an appeal to a higher tribunal, which shall be required to refer the question of right or wrong practice, involved in such appeal, for decision, to a board or inquest of experts, to be chosen in reference to their freedom from the prejudices which may be supposed to influence such as live in the immediate neighbourhood of the parties in litigation.

"Were our jurisprudence so ordered," remarks Dr. Prince, in conclusion, "that justice would be the rule, and a wrong verdict the exception, none but aggravated cases of ignorance or carelessness would usually be prosecuted, and the sufferer thinking himself aggrieved would first take counsel of an adviser versed in the science or art in question rather than of a sharp-nosed advocate who would be ready to undertake the case for a share of the profits."

The two addresses just noticed are followed by a series of reports from special committees.

The first of these reports is from the Committee on *Diseases of the Eye*. It is drawn up by Dr. Edward L. Holmes, of Chicago.

An interesting portion of this report is that which refers to the prevalence of conjunctivitis among the people of the west, and the cause of such prevalence. That all diseases of the eye, but more especially granular and catarrhal ophthalmia, are far more frequent in the Western than in the Eastern States, Dr. H. is satisfied by the facts which he has collected. This greater frequency of the diseases in question, is due to that augmented irritability of the mucous surfaces generally, which is found to exist in all climates marked, as that of the West is, by the comparative warmth of the larger portion of the year, the dryness of the atmosphere, and by high and long-continued winds which sweep at will over wide, extended, and for many months dusty plains. The exciting causes of ophthalmia in the Western States are, according to the reporter, mainly, sudden vicissitudes of temperature, the action of the winds more or less loaded with dust, and, in the cases of the pioneer settlers and cultivators of the prairie lands, careless personal habits, and exposure, when within doors, to the smoky atmosphere of their illy-constructed and badly kept cabins.

While Dr. H. is inclined to rank malarious influences among the predisposing causes of conjunctivitis he does not believe these to be, alone, sufficient to develop the disease; nor is he prepared to refer its prevalence in particular localities, and at particular seasons, to any hidden atmospheric influences, such as give rise to epidemics generally, there being, as he is convinced, sufficient apparent causes always present to account for its prevalence.

The remarks of Dr. Holmes on the assistance, in the diagnosis of the diseases of the eye, derivable from the use of the ophthalmoscope, on relapses in certain cases of iritis, and on sympathetic inflammation of one eye, following deep-seated inflammation of the other, though very concise, are pertinent and of immediate practical application.

Dr. Byford, of Chicago, presents a somewhat extended and most interesting monograph on the *inflammatory affections of the female breast*, which occur during pregnancy and the period of nursing. The remarks of the author extend over the entire subject of mammary inflammation, according as it is seated in one or other, or in several or all of the tissues and structures which make up the organization of the female breast.

It is very certain, as Dr. B. himself admits, that very few, if any, cases of mammary inflammation occur in which the disease is strictly confined to one structure of the organ only. Most generally it will be found to attack simultaneously, or to spread very early to several of them. Nevertheless, we believe with him that to study it, its causes, symptoms, progress, and results, as it presents itself in each of the anatomical divisions of the breast, will lead, more certainly, to the acquisition of clearer views of the nature and proper treatment of mammary inflammation and mammary abscess as they ordinarily present themselves to the practitioner. The entire subject is one that presses itself with peculiar force upon the attention of every practitioner: mammary inflammation being one of the most common affections attendant upon the puerperal state, and, at the same time, one of the most distressing, as well from the pain and inconvenience attendant upon it, as from its tendency to eventuate in the permanent destruction of the usefulness of the organ for lactation, and the impairment, to a very great extent, also, of its symmetry.

The young physician will find few of the simply inflammatory diseases more difficult to manage, none that will so often sorely try his patience, none that will enlist, to a greater degree, his sympathies in behalf of his patient. So long as the infant is allowed to remain at the breast, even though it should be confined to the sound one, in perhaps the majority of cases, the best directed means, however judiciously employed, will be found to fail in arresting the onward progress of the inflammation, and in preventing the formation of a more or less extensive suppuration; while, again, to wean the child is in most cases to consign it to the grave after it has pined away for a few months in a state of misery painful to behold.

The best procedure, were we always able to follow it out, would be to resort

betimes to a system of prophylaxis, based upon a careful investigation of the most frequent causes of mammary inflammation, both predisposing and exciting.

The most constant predisposing cause of the disease is, unquestionably, the pregnant and puerperal conditions. In some cases, indeed, the physiological congestion of the breasts which invariably precedes the commencement of lactation, and is present during, also, its early stage, may run so far to excess as actually to pass over into a pathological condition. This is particularly liable to happen in young, plethoric, primiparous females, and when it does happen it gives rise to true mastitis, or inflammation of the glandular structure of the breast. In very many instances, however, an increased predisposition to inflammation is due to certain conditions of the organ produced independently of pregnancy or lactation; this, as well as the major part of the exciting causes, is in a great measure under the control of the patient. It is very certain that, in most cases, the exciting causes, at least, may be guarded against by the exercise of a very little care.

The paper of Dr. Byford will be read with interest, and, we are persuaded, with much profit. It presents a very full and accurate description of the symptoms, course, and terminations of mammary inflammation, accordingly as it attacks one or other or several of the tissues and structures of which the female breast consists, with a rational account of its usual causes, and a clear exposition of the treatment best adapted to arrest its progress, or, when it has run on to suppuration, to guard, as far as possible, the mammæ from any permanent injury to either their function or their shape.

The next report is an exceedingly able one "*on surgery*," drawn up by Dr. Daniel Brainard.

Many of the facts embraced in this report have already been noticed in this journal. Still, of much of its contents a valuable abstract might be furnished; among these we may indicate the writer's remarks on the treatment of united fractures, the remedying of the deformity consequent upon angulation of bone after fracture, and the flexion of the limbs from anchylosis; the treatment of chronic hydrocephalus, spina bifida, and empyema by injections of iodine. The facts upon which these remarks are based, are, for the most part, personal to Dr. Brainard. We must content ourselves by directing attention to them, as well as to the very excellent essay on metallic sutures and ligatures by Dr. David Prince, and the valuable history of seventy-one fractures of different bones by Dr. Edwin Powell, both of which are included in the report of Dr. Brainard.

The report next in order is on *the changes in the composition and properties of the milk in the human female produced by menstruation and pregnancy*, and on the *food proper for infants when deprived of the milk of the mother*. It is from the pen of Dr. N. S. Davis, of Chicago, and is marked throughout by the same sound practical views which usually characterize the professional contributions of that gentleman.

From the facts and analyses collected by Dr. D., he is led to infer that the occurrence of pregnancy during the ordinary period of lactation either speedily reduces the quantity of milk secreted or lessens the proportion of solid or nutritive constituents to such a degree as to render it insufficient for the proper nourishment of a child over six months old.

"In a small proportion of cases, however, the milk secreted continues abundant and of good quality, but the health of the mother rapidly declines, while, in a still smaller proportion of cases, the mother and child both continue well nourished and healthy. Taking these statements as correct, they suggest two questions of much importance. First. Whenever pregnancy occurs during lactation, and the mother or child, or both, are found to exhibit symptoms of anemia should the child be immediately removed from the breast, or should an effort be made to devise such diet and medicine as would enable the mother to assimilate sufficient for herself, and both the intra and extra-uterine offspring? Second. If an attempt is made to sustain the mother and permit lactation to continue, what dietetic and therapeutical measures would be most efficient for that purpose?

"The defects in the milk, as shown by analysis, as well as the condition of the mother, readily suggest a diet containing abundance of caseine, gluten, or albu-

men, and such tonics as the compound syrup of the phosphates, or, still better, the hypophosphites of soda, potassa, lime, and iron; but the committee are unable to report a sufficient number of clinical cases to determine the actual value of such a course. In the great majority of cases thus far observed, nothing has been found safe short of an early removal of the child from the breast."

The next article is a short essay on the *nature, course, and treatment of rheumatism*, by Dr. JAMES S. WHITMIRE. The object of this essay is not so much to institute a more thorough investigation into the course of the disease or the character of the inflammation attending it, both of which Dr. W. presumes to be sufficiently well understood, as to invite attention to the suggestion originally made by Dr. John K. Mitchell, of Philadelphia, that the inflammation in rheumatism is brought about and sustained by functional derangement of the spinal cord—which derangement is the result of either active or passive congestion. We hardly think that Dr. W. has succeeded in either confirming or illustrating the pathology of rheumatism advocated by him, and which, with some slight modifications, has received the sanction of some of our leading pathologists.

Next in order is a report on *the medical uses of veratrum viride*, by Dr. A. HARD, of Aurora. The facts collected by Dr. H. sustain the general estimate of the remedy by the profession as an arterial sedative destined to replace all others, including the lancet, in the treatment of pneumonia, rheumatism, dysentery and peritonitis. In many cases of puerperal fever it will be found an admirable means for the reduction of the inordinate frequency of the pulse, without endangering the safety of the patient.

A report from the Committee on *Practical Medicine*, is next presented by Dr. G. GOODBRAKE, of Clinton, Illinois. The report is made up exclusively of excerpts from communications addressed to the committee by physicians in different parts of the State.

In a communication from Dr. NIGLAS, of Peoria, it is stated that *scarlet fever* prevailed extensively as an epidemic, in his immediate neighbourhood. In respect to the origin of the disease, according to Dr. N., there were reasons for believing that it may have been produced spontaneously by certain local morbific influences, independent of contagion from without.

Early in the spring of 1859, disease, he remarks, commenced to appear, presenting many of the characteristics of one or other of the forms of erysipelas. At first the cases were marked merely by fever, attended by the characteristic pulse, and the peculiar condition of the urinary secretion observed in erysipelas, but by no other physical sign of the disease. As the season advanced erysipelatous inflammation of the face made its appearance with slight symptoms of sore throat, soon afterwards well-marked cases of scarlatina were observed, and the disease speedily prevailed as the dominant epidemic.

With Dr. N., we are convinced that a close relation exists between erysipelas and scarlet fever. The epidemics of the latter have been found, in numerous instances, to be ushered in, accompanied, or followed, by the prevalence of the former disease.

Dr. Coleman furnishes the committee with an interesting account of an epidemic of *dysentery* which prevailed at Le Roy, during the summer and autumn of 1858.

During the winter months of 1859–60, writes Dr. Prince, of Jacksonville, pseudo-membranous inflammation of the respiratory passages was prevalent. The disease in some cases predominated in the larynx, giving rise to croup; in other cases bronchial disease predominated over that of the larynx and trachea, though in fatal cases these were usually combined. In other cases, again, the disease was confined to the nares, pharynx, and mouth. There was, sometimes, no cutaneous eruption—while, occasionally, the diphtheritic inflammation accompanied or followed an attack of scarlatina, which was at the same time epidemic, so as to lead to the suspicion that diphtheria and scarlet fever are the same affections, only differing in form.

The diphtheritic inflammation usually commenced in the palate and fauces. It always manifested a tendency to travel more or less speedily over the adjoining surfaces. In one fatal case the larynx, Dr. P. remarks, escaped until within a few hours of death, when croupal symptoms manifested themselves. There

was no distinct false membrane, a sanious discharge took place from the mucous membranes of the mouth, fauces and nares—especially from the latter. The dyscrasy seemed too great for the exudations or secretions to consolidate to any extent. What consolidation did take place, was in small specks or patches, which were soon loosened and detached by the fluid excretions poured out around them.

The disease was attended, invariably, by prostration, indicating the necessity of a supporting treatment.

The local application of a strong solution of nitrate of silver Dr. P. did not find to act so satisfactorily as he had been led to suppose would be the case. A weak infusion of capsicum, and a saturated solution of chlorate of potash, singly or in combination, in his hands, proved far more satisfactory. In the only cases in which he has seen the muriated tincture of iron applied, the effects were not such as to encourage him in its use.

The cautious use of alcoholic stimulants, the liberal use of concentrated nourishment, and the mildest and least debilitating laxatives, have seemed to Dr. P. to be the most rational as well as the most successful treatment.

If, Dr. P. remarks, the term croup be restricted to those cases of diphtheria in which the pseudo-membranous formation does not extend beyond the larynx; then, in cases of croup, we should infer, *à priori*, that the operation of tracheotomy would be very nearly as successful as when performed for the removal of foreign bodies from the trachea. But such is not the case. In a great majority of cases which, from all the circumstances attendant upon them, we should feel perfectly warranted in pronouncing those of uncomplicated croup, and in which the operation would seem adapted to afford the most prompt and permanent relief, it will fail to do so. Even where the operation has for a period seemed entirely successful, mucous rattle and laboured respiration will speedily ensue, and the hopes so fondly cherished by friends and medical attendants, will be cruelly disappointed. Dr. P. has operated in five of the cases referred to, but without the good fortune of saving a single one of the patients. In three, death was immediate. In the other two, death seemed impending, when, by opening the trachea, the relief that ensued was so striking as to lead to a strong hope for the final recovery of the patient. In both cases, however, death resulted in about four days subsequently from mucous inflammation within the chest. In one of these cases a solution of nitrate of silver was applied to the trachea. Were he again to operate, Dr. P. remarks, that he should make a very free application of this or some other mild caustic.

In former years, Dr. Nance, of Stark County, writes that he had but little confidence in any medication in scarlatina; but, a year or two since, he met with the recommendation, by a French physician, of carbonate of ammonia freely administered as almost an infallible remedy in the disease. Soon afterwards he had an opportunity of trying its effects in some malignant cases of scarlatina, attended with spasms, &c. He administered every hour or two a portion of a solution of ammonia containing three grains of the article. Complete recovery ensued. From thirteen to fourteen patients with scarlatina, being all who were treated in this manner, Dr. N. states, recovered.

Dr. Y. D. Fitch, of Kewanee, in a paper intended as an appendage to the report on obstetrics, proposes the use of *perineal pressure to aid in the expulsion of the child in parturition.*

The pressure proposed by Dr. F. consists in the introduction of one or more fingers into the vagina, successively, as the os externum becomes dilated. When two or more are introduced they are to be spread as much as possible, so as to put the walls of the vagina upon the stretch. Traction or pressure is made in a direction downwards, outwards, and backwards, so as to distend the os externum and render smooth and tense the walls of the vagina. This procedure was suggested to Dr. F. by the effect produced by the pressure of the child's head during its passage over the perineum in natural labour. He has practised it, he states, successfully, for the last six years, in more than two hundred cases of parturition. In some few cases the procedure is unproductive of any good effect. It will be found that, in such, the desired result will be derived from pressure made upon the anterior lip of the cervix uteri.

There can be no doubt that the manipulation recommended by Dr. F. will, in most cases of labour, have the effect of increasing the frequency and force of the expulsive pains; and that, in the hands of the well-instructed and experienced accoucheur, it may occasionally be resorted to as a useful means of facilitating the birth of the child. When, however, it is inopportunely put in practice and rashly or unskilfully executed, serious injury may be produced by it. The danger of its being abused, and the evils liable to result in consequence, far counterbalance, we are persuaded, the small amount of good its employment may effect.

2. The *Transactions of the Twelfth Session of the Indiana State Medical Society* commence with the "annual address" of the President, Dr. B. S. WOODWORTH, of Fort Wayne. There is exhibited throughout this address a spirit of fault-finding—of arrogant indiscriminate condemnation indicative of anything rather than a candid and discriminative mind. The animus evinced by the writer of the address in the major part of his remarks cannot fail to receive as pointed a condemnation as will his therapeutical teachings. An opposition has sprung up within a short period past, in certain quarters, to all active treatment in acute diseases, and to the employment of certain of our most efficient remedies, and those adapted to the widest range of cases, and when judiciously administered among the least dangerous, in either their immediate or remote effects. This opposition, on the side of which Dr. W. would appear to range himself, when not the result of false reasoning, inaccurate observations, and deficient experience, will be found, we fear, to be too often prompted by a desire to command applause and patronage by meanly truckling to popular prejudices.

A careful examination of the facts in our possession will, we believe, prove very conclusively, that an equal, if not a greater amount of mischief cannot fail to result from too inert a treatment of disease—one purely expectant—as from one of too active—too violent, if you please, a character. In the one case there is endangered the formation of diseased conditions of important organs, of a more or less serious and permanent character, while, in the other case, the usual result will be a state of excessive prostration, by which convalescence is rendered tedious, and a foundation even may be laid for the occurrence of some serious affection in the future.

The address is followed by a report on "*medical education*," by Dr. JAMES F. HIBBERD, of Richmond, Indiana. The plan of medical education set forth by Dr. H. contemplates the doing away entirely with private tutelage. The reasons assigned for it are, mainly, the want of proper qualification of "general practitioners" for the instruction of medical pupils, from their having neither the books, or apparatus, the time or inclination, even when they have the ability for teaching.

To secure to the community the services of a well-educated medical profession, Dr. H. proposes the incorporation of a sufficient number of competent physicians into an institution having for its object to determine the qualifications requisite in such as would enter upon the practice of medicine in either or all of its departments, by subjecting to a proper examination all who shall offer themselves as candidates for the doctorate and conferring it upon those only whom they shall find to be competent.

The next report is on "*the use of the microscope*" in pathological investigation, by Dr. CALVIN WEST, of Hagerstown, Indiana. It presents a very rapid sketch of some of the more important pathological facts that have been developed by the aid of the microscope. To these there are daily being added others of a still higher importance in a practical point of view; while the mistakes which were made in the early application of the instrument to the investigation of disease, have been in a great measure detected. The pathologist is in consequence enabled to arrive at more positive, definite and accurate conclusions, than before in respect to the presence, nature, and extent of diseased structure and diseased products.

The report "*on new remedies*" by Dr. T. B. HARVEY, of Plainfield, Indiana, which is next in order, presents a highly interesting notice of the leading remedial agents recently introduced to the notice of the physician, and of the appli-

cation of certain of those already known to the treatment of diseases in which their efficiency had not before been noted.

The articles briefly noticed in the article before us are, *the double iodide of iron and quinine*, as a remedy of peculiar efficacy during the period of convalescency from all such diseases as induce decided impoverishment of blood. *Oxalate of cerium*, as a tonic, especially in gastric affections attended with frequent and distressing vomiting—and for the relief of vomiting occurring during pregnancy. *Iodide of ammonia* in constitutional syphilis. *Propylamine* in rheumatism. *Apiol* in amenorrhœa and dysmenorrhœa. *Persulphate of iron*, in saturated solution, as an injection per vaginam, for the restraining of post-partum hemorrhage. *Perchloride of iron* internally and externally as a hæmostatic, and as a remedy in purpura and diphtheria. *The hypophosphites of lime and soda* in phthisis and atonic dyspepsia. *Veratrum viride* as a sedative in many diseases. *Hypophosphate of quinine* in intermittent fever. *Hydrochlorate of ammonia* in neuralgia. *Belladonna* as an antilactescent. *Hydrocyanate of iron* in epilepsy. *Tartarized antimony*, in large doses, in traumatic tetanus. *Woorara* in the same disease. *Iodide of potassium* in asthma. With some very general remarks on the subject of *hypodermic* medication.

All the interesting facts which Dr. H. has noticed in the above report have been already furnished to the readers of this journal, either in its original department or in the quarterly summary.

We have next the history of three cases, related by Dr. J. A. Comingore, of Danville, Indiana.

The first of these cases is one of *stricture of the œsophagus*, the result of inflammation, in a female, 26 years of age. There exists in this case probably ulceration in the vicinity of the stricture. The patient is rapidly improving under the use of the solid nitrate of silver, applied to the vicinity of the stricture by means of an elastic bougie.

The second case is one of *naso-pharyngeal polypus*, in a lad of 4 years of age. The chief symptom was obstructed respiration caused by the entire blocking up of the posterior nares by the polypus. The latter was removed with great relief to the patient. By the end of a week, however, the tumour again made its appearance and attained a size equal to what it had in the first instance. It was again entirely removed, and the surface from which it sprung cauterized with a strong solution of nitrate of silver. Notwithstanding, in less than a week the tumour had grown, once more, to such a size as to threaten the lad with suffocation. For the third time it was removed, and the place of its attachment cauterized as before. The polypus, however, again reappeared and was again removed—but with no greater success than previously. Dr. Mussey, of Cincinnati, now saw the patient, and pronounced the growth to be the result of malignant disease. He advised 2 grs., in solution, of iodide of ammonia, to be given every four hours, and a wash to the parts of a solution of ʒj persulphate of iron in ℥j of water, to be applied with a mop twice a day. Ten days subsequently the patient died.

The third case is one of placenta prævia. The placenta was implanted centrally over the os uteri. There was profuse hemorrhage. Dr. C. immediately detached the placenta from the uterus. The os uteri being dilated, but the uterine contractions very trifling, he gave the patient every fifteen minutes a drachm of the tincture of ergot, with, at the same time, a little brandy and water to relieve the faintness from loss of blood. After three doses of the ergot had been administered strong expulsive pains occurred, and at the end of an hour, the child—a female—was expelled, dead and exsanguine. The placenta was pushed before the head into the vagina where it was left, to the right. Not much hemorrhage followed its delivery. The patient continued to do very well, until the tenth day after delivery, when she was attacked with crural phlebitis, which, with great *naiveté*, Dr. C. assures us "considerably retarded her convalescence."

3. The Medical Society of New Jersey ranks among the oldest of the associations established in our midst "for the advancement of medical knowledge and the mutual improvement of their members." It is believed that its claim to

priority of organization over all similar associations in this Western Hemisphere is well founded. Formed in 1766, it has now been in existence for nearly a century. The amount of good it has been, during that period, instrumental in effecting, in its efforts to carry out the objects of its organization, it would be very difficult to estimate. So far back as its history can with certainty be traced, the society has been ever found arrayed in defence of legitimate medicine, administered by well-instructed practitioners, governed by a strict code of medical ethics.

The 95th session of the society, held January 22d, 1861, was opened by an address from the President, Dr. W. ELMER. The theme of the address is the progressive nature of medical science, and the several gradations through which the medical profession has passed in its onward and upward career.

The views advanced by Dr. Elmer are sound and manly—while his entire address is replete with instruction.

From the report of the standing committee we learn that the year 1860 was marked by an unusual freedom from disease throughout the State of New Jersey. From the general summary which is given by the committee of the reports received from the county societies, it is stated that every one of the latter notice the fact of the prevalence of diphtheria, to a greater or less extent, as an epidemic, during the whole of the year 1860. It appears, however, that the disease was most prevalent in the counties of Cumberland, Essex, Gloucester, and Hunterdon. It is regarded by all the reports as not being a local affection, but one consisting, essentially, in a diseased condition of the blood. Most of them pronounce it a specific affection, altogether distinct from scarlatina and membranous croup.

The membraniform exudation, from which the disease derives its name, and which constitutes its chief diagnostic symptom, is described as first appearing in the form of isolated patches, but becoming, sooner or later, in the course of the attack, continuous over the veil of the palate, the fauces, and the adjacent parts; and, in the more severe and fatal cases, spreading into the larynx and trachea.

The disease, in the reports referred to, is set down as an epidemic—the result of either contagion, infection, or malarious influences.

In some sections of the State it appears to have prevailed to a very limited extent, and in a particularly mild and benignant form. It was not attended, in any instance, with cutaneous eruption. In its more severe forms, it was, with few exceptions, of a low type. It prevailed alike in high, well drained, non-malarious districts, and in low, marshy, insalubrious districts. A similar statement is made in nearly all the reports we have of the occurrence of the epidemic in Europe and this country.

The greater portion of the facts contained in the reports before us, which have a direct bearing upon the etiology of diphtheria are, to say the least of them, very loosely stated, while they are altogether inconclusive in their character. As is the case with every other epidemic malady, there can be very little doubt that the prevalence of diphtheria in any given locality will be increased, and the character of the disease augmented in malignancy by malarious causes, and by the crowding together of patients in damp, filthy, badly ventilated and over-populous neighbourhoods and dwellings; but that the disease can be generated by local causes alone we have strong doubts. In respect to the question of its propagation by contagion, the facts deducible from the history of its prevalence in New Jersey certainly furnish no conclusive evidence,

Though often fatal, the disease was found, we are told, to be as readily controlled by an appropriate treatment, judiciously administered, as any other grave disease. Dr. Bacon, of Cumberland, reports 8 deaths in 200 cases; Dr. Rosenberger, of Hunterdon, reports 3 deaths in 80 cases; Dr. Southard, of Essex, 4 deaths in 40 cases. Giving, in the aggregate, a mortality of about *four per cent.* This mortality will be found so extremely small when compared with that which is reported to have occurred in other places where diphtheria has prevailed epidemically, that every one will become anxious to learn what was the nature of the treatment pursued by those who, in the management of the disease, have been so eminently successful. There appears to have been a remarkable unani-

mity among the practitioners of New Jersey in their several methods of treatment, which were all of a tonic and sustaining character—the disease being in the majority of cases characterized by asthenia. In respect to the particular remedies which are reported to have been most successful in conducting the disease to a favourable termination we find enumerated the tincture of the sesquichloride of iron—given in doses of from 10 to 15 drops, in water, every three or four hours; the chlorate of potash; quinine, brandy, milk punch, chloric ether, etc. Locally, to the throat were applied, and with more or less success, the nitrate of silver in solution—20 to 50 grs. to the ounce of water—sulphate of zinc, and tannic acid.

The next most important epidemic noticed in the reports before us, is that of scarlet fever. It appears to have prevailed chiefly in the cities of Newark and Camden, while the residue of the State, so far as heard from, was to a very great degree exempt from the disease.

In Newark, scarlet fever made its appearance in the autumn of 1859, and continued to prevail, with short intervals, up to January, 1861. The number of deaths from the disease reported to have occurred from September, 1859, to January, 1860, was 96; while during the ensuing year, ending January, 1861, the number of deaths reported amounts to 233, giving a total of deaths from scarlatina, during the 16 months, of 329. The deaths are computed as having been *one* in every *ten* cases, which would make the entire number of cases of scarlet fever that occurred during the period just indicated, *three thousand two hundred and ninety.*

In Camden, scarlatina commenced in the latter part of June, 1860, and continued to prevail up to the close of the year, and during the month of January, 1861. It was attended with considerable mortality.

Pertussis and measles are noted as having prevailed during the year 1860 in different portions of the State. The latter exanthem was especially rife in Orange County, during the last four months of 1860, and still continued to prevail during the month of January, 1861. It exhibited nothing unusual in its symptoms or march, and was, in general, of a mild type.

In respect to malarious, paludal, or periodic fevers, a curious, though by no means novel fact, is noticed in the reports under consideration. It is, that, in those sections of country and neighbourhoods where, in former years, these diseases prevailed most extensively—constituting the constant autumnal endemic—they are now, comparatively, of unfrequent occurrence; in some districts they have even entirely disappeared. A similar state of things has been recorded as true in respect to our own and other States. This diminution or disappearance of malarious fever has been attempted to be accounted for from the better drainage of the country, by which large tracts of overflowed and marshy land have been redeemed; from the improved and more extensive culture of malarious districts, and the discontinuance and emptying of numerous large mill ponds. There is no doubt that in this way the disappearance, to a greater or less extent, of periodical fevers, noticed in different portions of our country, is very satisfactorily accounted for. It will not, however, furnish a satisfactory explanation of the fact, applicable to every locality. In our own State, along the shores of many of our rivers in the interior, which have undergone no apparent change since the period when, every autumn they were the fruitful source of disease to all who dwelt or even tarried, for a season only, in their immediate vicinity. That the endemic constitution of the atmosphere of these localities has undergone a change is very certain; the nature and cause of the change are as yet unknown.

Another curious fact in the history of our epidemics may be here noticed, notwithstanding it is not prominently brought forward in any of the reports embraced in the volume of *Transactions* under review. We refer to the increased prevalence of fever of a continued type—typhoid fever, for example—in malarious districts, in proportion to the decreased prevalence there of fever of a periodic type—that usually referred to a paludal or miasmatic source.

Among the reports in the volume before us—all of which are replete with matter of a highly interesting character—we would especially notice the one on "the Medical Topography of Newark," by Dr. J. Henry Clarke. It is in every

point of view, so far as it goes, an able and interesting paper. Though it is true, that the several questions involved in the general scope of the report are but slightly touched upon, it nevertheless will be found to furnish a valuable basis for a thorough sanitary survey of the city of which it treats, preliminary to the adoption of measures adapted to abate its endemic maladies, and to protect it, as far as possible, from the visitation of a threatened epidemic, or, if one should visit the city to limit its spread, and disarm it of its malignancy.

Besides the reports from counties, the New Jersey *Transactions* embrace two papers on special subjects. The first of these is an essay of some pretension on "the Mind and the Nervous System in their general relations to Disease," by DR. EZRA M. HUNT.

The author of this essay has endeavoured by what he calls "a passing reference to facts" to give due prominence to "the nerve origin of disease," and to show, that nervous and mental states, are at least to be under supervision, and an effort made in practice to reach the *sources* of morbid phenomena in the abnormal conditions of certain portions of the nervous system, rather than merely to turn all our efforts simply to removing their results.

We believe fully with Dr. Hunt that in every attack of disease the nervous system plays the most important part, and that the morbid phenomena and lesions of structure—the disturbances of functions and depravation of the secretions owe their origin, directly or indirectly, to disturbances of nerve action. We believe with him, too, that in all cases where we are able to detect the sources of morbid conditions and phenomena it is to these that our remedies should be mainly and primarily directed; and that, consequently, in all diseases, such means as have the effect to modify abnormal nerve action are among the most important of our materia medica. We believe with him, still further, that in the treatment of every form and grade of disease, the proper management, from first to last, of the entire regimen of the patient—not only the food he eats—the water he drinks—the air he breathes, his bedding and his clothing, but also the mental, moral, and emotional influences to which he is subjected, is of equal importance with a strictly remedial treatment. But while in the management of disease, we would not have the practitioner overlook the important part the nervous system plays in the production, propagation, and continuance of morbid states, and morbid phenomena—nor neglect any of the remedial measures especially adapted to restore that system to its normal state, we, at the same time, must insist that he does not overlook entirely whatever disturbed condition of any organ may be present, nor refrain from the application of remedies directed to restore such organ to its healthy state and functions.

The second essay is "on the Water-cure Establishment in the town of Orange, N. J." From the facts which have fallen under the notice of Dr. Stephen Wickes, the author of the essay, he is convinced of the impropriety and danger of the so-called "water-cure," as administered without due reference to the nature, and type, and stage of the disease in which it is practised; the age, sex, condition and idiosyncrasy of the patient, etc. etc. The danger attending its indiscriminate use is referred by Dr. W. to its liability to produce more or less congestion of the central organs, and depress unduly the vital powers. He admits that the local application of cold water for the reduction of inflammation and congestion, and for the arrest of hemorrhage, will be found beneficial in a very large class of cases. Even its general application in certain morbid conditions will exert a prompt curative effect.

Dr. W. very correctly remarks that the employment of water as a curative agent is no new thing. What is now known of it as a remedy for disease—all that is really valuable in its varied remedial application—cold—warm—or in the form of vapour; even the famous packing process—was known and practised by medical men long before the inventor of the modern system—if it may be called a system—of hydropathy was born. D. F. C.

ART. XV.—*Reports of American Institutions for the Insane.*

1. *Of the Maine Insane Hospital, for the year* 1860.
2. *Of the Vermont Asylum, for the fiscal year* 1859–60.
3. *Of the McLean Asylum, for the year* 1860.
4. *Of the State Lunatic Hospital, Worcester, Mass., for the fiscal year* 1859–60.
5. *Of the Retreat, at Hartford, Conn., for the fiscal year* 1860–61.
6. *Of the Bloomingdale Asylum, for the year* 1860.
7. *Of the New York City Lunatic Asylum, for the year* 1860.
8. *Of the King's County (N. Y.) Lunatic Asylum, for the fiscal year* 1860–61.
9. *Of the N. Y. State Lunatic Asylum, for the fiscal year* 1859–60.

1. THE medical record of the *Maine Insane Hospital*, for the year 1860, presents us with the following statistics:—

	Men.	Women.	Total.
Patients at the beginning of the year . .	129	108	237
Admitted in course of the year	84	52	136
Whole number	213	160	373
Discharged, including deaths	82	51	133
Remaining at the close of the year . .	131	109	240
Of those discharged, there were cured . .	38	25	63
Died	18	13	31

Causes of death.—Phthisis pulmonalis, 7; epilepsy, 4; chronic diarrhœa, 4; general paralysis, 3; exhaustive mania, 3; pneumonia, 2; dropsy, inflammation of the bowels, scrofula, dysentery, congestion of the brain, old age, erysipelas, and suicide, 1 each.

The death by suicide was the only one which has occurred at this hospital during a period of fifteen years.

In the course of the winter a series of lectures, by the Assistant Physician, was delivered before the patients. A "local paper," entitled "*The Hospital News-Letter*," was "published" once in two weeks, and likewise read to the inmates.

The patients' library now contains about two thousand volumes. Dr. Harlow recommends the introduction into the hospital of the system of forced ventilation. At present, the sole dependence, for atmospherical change, is "the ordinary ingress of fresh air through doors and windows."

We take the subjoined from the remarks upon oinomania:—

"We may define oinomania to be an irresistible impulse to indulge in the use of intoxicating substances. It differs quite materially from ordinary drunkenness, modernly styled alcoholism, which arises from a voluntary use of alcoholic beverages, and should be carefully discriminated. While we recognize on the one hand a diseased cerebral condition, which usurps the will and impels one on to a most extravagant use of intoxicating drink, we must not on the other hand ignore the existence of ordinary intemperance in persons who possess a perfectly normal brain, but who choose to indulge their appetite to excess, because they think they have a right so to do. To conclude that there is no inebriety without disease would be as erroneous as to deny that there is no disease which gives rise to inebriety. Both are true, and both alike result in intoxication. The question then arises, how shall we know the one from the other? We may be materially aided in a diagnosis by learning the psychological history of the family to which the individual belongs. When we see the offspring of an insane parent given to frequent, habitual intoxication, we may strongly suspect the existence of an abnormal cerebral condition. A similar suspicion would arise, if we should find the son of an intemperate father manifesting an appetite for stimulants in early life—indeed, an early developed appetite of this kind in any person, would point in the same direction; but, the most prominent pathognomonic symptom attending the disease, is the utter inability to control the thirst for drink. Regardless of all the higher emotions, against his conscience, his reason, and his better judgment, the oinomaniac is blindly driven on by the

ruthless monster. So complete is the loss of self-control in this disease, that in order to appease his morbid appetite the unfortunate victim will resort to measures the most extreme. * * * * Owing to the fact that all cases of inebriety without distinction have been looked upon as the result of moral obliquity rather than physical weakness or organism, they have been left to take their own course—to reap the fruit of their own sowing without let or hindrance. But thanks to an overruling Providence, the poor unfortunate inebriate is beginning to receive, through an enlightened community, a more benevolent consideration. It is, I believe, acceded by all medical men, that the first great step in the treatment of inebriety or oinomania, is restraint, and this cannot well be accomplished without seclusion. Without these the disease cannot be successfully treated, indeed, the safety of the community and of the patient himself often demands them."

2. The general results, at the *Vermont Asylum for the Insane*, for the fiscal year ending July 31, 1860, were as follows:—

	Men.	Women.	Total.
Patients at the beginning of the year	212	219	431
Admitted in the course of the year	78	65	143
Whole number	290	284	574
Discharged, including deaths	73	65	138
Remaining at the end of the year	217	219	436
Of those discharged, there were cured			58
Died			37

Dr. Rockwell gives the following summary description of the system of treatment pursued at this hospital:—

"So large a proportion of the patients suffer from some physical disease or functional disturbance that immediate attention and investigation are always made of each case on its first admission into the institution. The medical treatment is not confined exclusively to any particular theory, but where any disease is manifested, the individual case receives special attention, and that medication is adopted which its symptoms indicate. Most of the patients received into this institution have passed the acute stage of their disorder, and require invigorating remedies and nutritious food for their recovery.

"The great principles of our moral treatment are kindness and employment. It is necessary that kindness should be accompanied by mildness and decision, varying according to the peculiarities and temperament of each patient. The employment selected for each should be such as will most interest his mind and divert it from his delusions. It should also be agreeable at the time, and such as will afford pleasant reflections afterwards."

3. From the report of the *McLean Asylum for the Insane*, we obtain the following numerical history of the treatment during the year 1860:—

	Men.	Women.	Total.
Patients at the beginning of the year	85	90	175
Admitted in course of the year	58	63	121
Whole number	143	153	296
Discharged, including deaths	52	57	109
Remaining at the end of the year	91	96	187
Of those discharged, there were cured	15	24	39
Died	10	14	24

The already elaborate system of moral treatment adopted at this hospital, has been enlarged in its means and its effectiveness by the introduction of gymnastic exercises scientifically pursued. This is a novelty in establishments for the insane upon this side of the Atlantic. We extract from the report the remarks in relation to it.

"In addition to the standard amusements of ball, billiards, and bowling, for which we have abundant facilities, an innovation pleasantly combining diversion

and exercise, has been made under the direction of Dr. Dio. Lewis, in the introduction of his valuable system of gymnastics. He has spent much time in patient and judicious instruction to large classes on both sides of the house, and succeeded in interesting and accomplishing them in the numerous feats of his art. Much benefit has resulted therefrom, not confined to those actually engaged in the exercises; the bystanders could laugh heartily at the efforts of others, and a new interest has been attached to other varieties of physical exercise, and to the common amusements of battledore, bagatelle, chess, and cards."

The subjoined extract will furnish an idea of the extensive facilities for literary entertainment enjoyed by the inmates of the asylum.

"About three hundred and fifty volumes have been added to the library during the year. We receive all the principal reviews, magazines and newspapers of the day, foreign as well as local, affording an ample and entertaining supply of reading. The events of the day in their succession—the arrival of the Great Eastern, the visit of the Japanese, the Italian war, the movements of Garibaldi, the Prince of Wales' progress, the political campaign, election news, the capture of Pekin, and the rights of secession and coercion, have each excited attention, and have been commented upon with as much interest and perhaps as wisely as in the great world outside of us."

From Dr. Tyler's accurate and interesting description of *classes of patients*—the classification being based upon the form of disease—we make the following extract, in the belief that the information contained therein is not generally disseminated:—

"The clear comfort and tranquil happiness of persons in advanced convalescence from mental disease, and especially from its depressing forms, as manifested in every action and in every feature, and as described by the individuals themselves, are rarely equalled under other circumstances, and approach as near completeness as any condition vouchsafed to mortal man. Often not a cloud casts its shadow, nor a care presses upon the heart brimming over with kindness to all around, and with devout thankfulness to God. Like all other emotions, these are not confined to the possessor, but are eminently diffusive, and radiate upon every body with whom he associates, composing the restless, assuring the doubtful, and cheering and comforting and lifting the burden of all.

"There are a number of persons in every asylum differing from each other in their personal peculiarities and form of disease, whose condition unfits them entirely for the duties and enjoyments of home and general society, and forbids any reasonable expectation of recovery, but who still have a keen appreciation of all the comforts and amenities of life. They are methodical in their habits, perhaps intensely so; are never troubled by the restrictions of the house, and highly value its system and routine. They are careful of their dress and personal appearance, and of the arrangement of the furniture and conveniences of their rooms: they enjoy their walks and drives, and amusements and books, and are always busily and usefully occupied. They are happy alone, and are also fond of the society of their companions; they are thankful for any favours shown them, and are always ready with kind offices for those who seem to require their attention. They regard the asylum with almost reverential feelings, invariably commend it and all connected with it, and are always found on the side of good order in any time of murmuring or discontent. If they consider it a *duty* to occasionally speak of the superior comforts and freedom of home, they make an ingenious exception of themselves, and always have a good reason for never being quite ready to go thither. Persons of this class enjoy a great deal themselves, and confer a great deal of happiness upon their fellow-patients, and upon all in any way connected with them, and being more than an offset to their antipodes in faith and feeling, contribute largely to the comfortable side of asylum life."

4. The report of the *State Lunatic Hospital*, at Worcester, Massachusetts, contains the following summary of the records for the fiscal year ending with the close of September, 1860:—

	Men.	Women.	Total.
Patients at the beginning of the year . .	152	165	317
Admitted in the course of the year . . .	105	110	215
Whole number	257	275	532
Discharged, including deaths	102	99	201
Remaining at the end of the year . . .	155	176	331
Of those discharged, there were cured . .	65	64	129
Died	12	10	22

Died of epilepsy, 5; exhaustion, 4; consumption, 3; marasmus, 3; old age, 3; maniacal exhaustion, 2; suicide, 1; variola, 1.

"The standard of health, though always low in hospitals for the insane, has been, during the year, higher than usual. Late in the autumn there were a few cases of pneumonia of a mild character; in the spring there were several cases of varioloid and smallpox; and in the summer three or four cases of measles.

"Three patients died during the year who were more than eighty years of age. Two were between the ages of seventy and eighty years, and three were between sixty and seventy years of age."

At some of the European institutions for the insane, it has been the practice, for many years, to keep an accurate daily record of the number of patients employed in useful labour. Upon this side of the ocean, we have dealt too much in general assertions in regard to this subject. We are glad to perceive, in the report now under notice, a departure from the usual course.

"By an accurate account kept of every day's labour performed by the inmates of the hospital it has been found, that five thousand seven hundred and thirty-two days' work have been done (in the course of the year) by males, and nine thousand five hundred and fifty-two by females. These are full days' work performed by the patients in the various departments of labour connected with the establishment. Besides this, there is a great amount of light labour performed by patients in and about the wards, dormitories, and dining-rooms, which cannot be taken into the account, because it is engaged in only at short intervals. Many of the females make and repair their own clothing, and also a part of the clothing worn by their children at home.

"In this connection it may be proper to add, that by some alterations now going on in the buildings of the hospital, we hope soon to open three large, light and cheerful rooms, as work-rooms for females, and by changing the occupation of a detached building, to fit up for the males, in addition to our present carpenter's and joiner's shop, two large and convenient rooms, in which the various kinds of labour suited to the capacity of the patients may be performed."

Dr. Bemis enters into a discussion of the causes of insanity, as presented in the table included in his report. Concurring, as we do, in most of the opinions or views therein contained, and believing that a necessity still exists for a wider distribution of them among the members of the medical profession, we proceed to make a somewhat liberal extract.

"There is hardly an assigned cause contained in the table, moral or physical, which may not induce in other persons chorea, epilepsy, convulsions, or paralysis. It is necessary, therefore, in attempting to investigate the diversified causes of insanity, to divest the mind of any previous ideas which might bias the judgment, and attend closely to the facts which have been recorded by intelligent observers, and which, if in themselves imperfect, giving only a partial light, are much better than any preconceived notions or theoretical speculations. By so doing we may hope eventually to arrive at some more satisfactory conclusion regarding the nature and cause of mental disease, and thus be able to exercise some control over the conditions which produce so great an evil.

"Fifty-nine patients have been admitted in the course of the year, who, for a considerable period of time previous to the development of mental disease, had been afflicted with ill health in some of its many forms. There can be no doubt that in nearly every case of insanity the attack is preceded by a bad state of the physical health. In short, that insanity is a disease of debility, not of strength, and that it generally arises from defective nutrition, transmitted weakness, or physical depression produced by personal privation or suffering. Insanity is

never a spiritual malady, a disease of the soul, a sickness of the immaterial principle; but the perverted action of the mind resulting from a defect in its material instrument. Whatever disturbs the general health, whatever weakens the bodily powers, disturbs and deranges the healthy operations of the mind. Whatever strengthens the body does much towards restoring the integrity of the mental faculties. The mind under all conditions partakes of the health of the body, and is depressed, irritated, and morose, or calm, clear, and cheerful, according as the body is well fed, properly clothed, and thoroughly exercised. * * * *

"Among the many physical causes of mental disease, perhaps none is more frequent and certainly none oftener overlooked than a disordered state of the stomach and bowels. It is that condition of the alimentary canal which gives rise to constipation, sometimes alternating with diarrhœa, and accompanied with indigestion, flatulence and eructations, anorexia and nausea, transient pains in the hypochondria, livid and yellow suffusions of the skin, viscid secretions of the mouth, and extremely offensive breath. This condition of the alimentary canal which so often lays the foundation for mental disorders is the result of a great variety of causes. Perhaps the most frequent is excess in the use of indigestible food. Too great indulgence of the appetite on the one hand, scanty and unwholesome diet on the other, produce nearly the same train of symptoms, and indicate a very common condition in those cases in which disorders of the mind follow affections of the stomach and bowels.

"The relation in which complaints of the alimentary canal stand to the disease of the brain may sometimes be doubtful; in some it is the relation of cause, in others it may be that of effect. But even then there is a reaction of the secondary upon the primary disease, and the original is aggravated by the complication.

"All must understand how readily the brain is influenced by every condition of the alimentary canal. That general uneasiness and dissatisfaction which troubles so many persons so often; that state of the mind in which nothing in the affairs of life gives pleasure, or hope; that quality of the affections which rejects all the attentions of friendship, all the kind offices of love—is frequently nothing more than the result of sympathy between the brain and a constipated state of the bowels. It is humiliating to admit that cheerfulness, good humour, and large anticipations of future welfare, may be wholly destroyed by a fit of indigestion: that the strength of the memory may be diminished, the imagination blunted, the power of concentration impaired, by a neglected state of the alimentary canal.

"No class of patients suffer more seriously than those who are afflicted with this general disorder of the digestive organs. The deranged state of the thinking faculties, the sense of weariness and oppression, at first slight and irregular, and hardly noticed, becomes daily more severe and oppressive, until the power of self-control is lost, and by the influence of disease, or it may be by accident, some one sensation or emotion becomes exalted, and the judgment impaired; a general and constant irritability of the mind succeeds, which disturbs and deranges all the mental operations. It is hardly to be supposed that any one cause of insanity is more common than this neglected condition of the stomach and bowels. Its effects are so slight and irregular at first as not to arrest the attention of the patient, and thus known to the physician only in the advanced stages of the disorder when the prospect of recovery has become slight, and palliative treatment only can be attempted."

5. At the Hartford *Retreat for the Insane*, for the year terminating with the close of March, 1861, the numbers which we usually extract from the reports, were as follows:—

	Men.	Women.	Total.
Patients at the beginning of the year . .	109	118	227
Admitted in the course of the year . . .	66	98	164
Whole number	175	216	391
Discharged, including deaths	66	99	165
Remaining at the end of the year . . .	109	117	226
Of those discharged, there were cured . .	28	47	75
Died	5	4	9

Causes of death.—Exhaustion, 3; paralysis, 3; "disease of the lungs," 1; consumption, 1; general debility, 1.

The number of recoveries was larger, and the proportion of deaths smaller than in any preceding twelvemonth of the last twenty years.

"Our 'Amusement Hall' gives us such new and increased facilities for all sorts of social gatherings, that they have, of course, been more numerous and effective than we could formerly make them. As often as once or twice a week, during the winter, our hall has been filled with an amused, interested and attentive audience, either joining in our dancing parties, or listening to lectures, concerts, Ethiopian minstrels, private theatricals, &c. These hours thus spent have most clearly demonstrated the power of cheerfulness as a remedy, and that laughter oftentimes 'doeth good like a medicine.'

"The introduction of gas has proved, at least in the estimation of our inmates, the most acceptable of our improvements."

A large part of Dr. Butler's report is devoted to an account of an effort made in the course of the year to raise, by voluntary subscription, a fund of twelve thousand dollars, to be appropriated to such improvements of the establishment as will render the system of moral treatment more nearly perfect, and consequently more effective. The special objects were, the erection of a conservatory, a bowling-alley, with calisthenic exercises for the females, and a museum and reading-room for the males; the laying out and decoration of the grounds, and the purchase of books and musical instruments. At the date of the report, the sum subscribed for these purposes was $11,222.

6. The *Bloomingdale Asylum for the Insane*, being among the first few establishments erected for its purpose in the United States, was not, in either its general plan nor the details of its internal architectural arrangements, so well adapted to the treatment of persons suffering from mental disorder, as are most of the hospitals of more recent construction. It consisted of three separate buildings: its facilities for classification were but small: it had no room properly designed for gatherings of the patients for lectures or religious worship. These defects were in part remedied by additions to two of the buildings, some five or six years ago, and a further amelioration has now been effected by the union of the main edifice with the detached building for females. This union was made by the erection of an intervening wing, 110 feet in length, and 42 feet in width. It contains commodious rooms for patients, "a diversion-room and lecture-room," infirmaries, bath-rooms, &c.

	Men.	Women.	Total.
Patients in the asylum, January 1, 1860	68	84	152
Admitted in course of the year	75	75	150
Whole number	143	159	302
Discharged, including deaths,	72	75	147
Remaining, December 31, 1860	71	84	155
Of those discharged, there were cured	26	24	50
Died	15	14	29

Forty-six patients were discharged as "improved;" and of these, it is said "thirteen are known to have subsequently recovered."

Causes of death.—"Acute mania with intense excitement," 9; pulmonary consumption and marasmus," 6; apoplexy, 3; chronic diarrhœa, 3; suicide, 2; disease of the heart, 2; general paralysis, 2; chronic disease of the brain, attended by partial paralysis, 1; old age and exhaustion, 1.

"Among the patients admitted," says Dr. Brown, "acute physical disease has been more frequent and more severe than during many previous years, and the deaths have been proportionally more numerous. Ten patients died within a fortnight after admission."

7. The general statistics of the *New York City Lunatic Asylum*, for the year 1860, are as follows:—

	Men.	Women.	Total.
Patients at the beginning of the year . .	287	424	711
Admitted in the course of the year . . .	161	240	401
Whole number	448	664	1112
Discharged, including deaths	147	211	358
Remaining at the end of the year . . .	301	453	754
Of those discharged, there were cured . .			149
Died	56	62	118

Causes of death.—Consumption, 43; *paralysie générale*, 11; chronic diarrhœa, 11; epilepsy, 9; congestion of the brain, 6; typhomania, 5; exhaustion from mania, 5; apoplexy, 4; old age, 4; paralysis, 3; "submersion," 2; hæmoptysis, abscess of the kidneys, peritonitis, cancer of the breast, cerebral tumour, encysted dropsy of ovary, serous apoplexy, typhus fever, diarrhœa, fatty degeneration of the heart, meningitis, congestion of the lungs, pneumonia, ulceration of the stomach, and hydrocephalus, 1 each.

"No epidemic has prevailed, but this large mortality has resulted mostly from chronic diseases, which existed at the time of admission."

No less than *ninety-four* of the patients received came from other public or charitable institutions in the city. These, as a class, are unfavourable cases, and it is stated that only six *per cent.* of them recovered.

We make the subjoined extract from Dr. Ranney's remarks upon moral treatment:—

"In an asylum with so large a number of patients much talent exists, and it becomes the duty of the superintendent to develop and make it available. Some of the dramatic performances were attended, not only by the patients, but by parties residing in the city, who took an interest in their welfare. In one instance the comedy was written by an inmate of the asylum, and several young gentlemen, from the other institutions, assisted in representing it on the stage. As a literary production it possessed much merit, and its representation was highly creditable. Any such means, calculated to engage the attention, has generally a favourable effect. I believe, however, that the cultivation of a social spirit, true sympathy, and good feeling, between officers, attendants, and patients, is of more value than anything else. So long as mind exists, the faculties are not obliterated; and although many be greatly impaired, others may exhibit unusual activity. The intellectual faculties may be much enfeebled, and yet the emotions, the desires, the affections, the idea of right remain intact."

A large part of this report is devoted to subjects devoid of interest from a medical point of view.

8. The *King's County* (*N. Y.*) *Lunatic Asylum* has become a large establishment, as will be perceived by the record of its patients for the fiscal year ending on the 31st of July, 1861.

	Men.	Women.	Total.
Patients at the beginning of the year . .	126	182	308
Admitted in course of the year	94	96	190
Whole number	220	278	498
Discharged, including deaths	83	85	168
Remaining at the end of the year . . .	137	193	330
Of those discharged, there were cured . .	31	39	70
Died	25	20	45

Died from general paralysis, 9; phthisis, 7; exhaustion, 5; diarrhœa, 5; dysentery, 4; congestion of the brain, 3; epilepsy, 3; erysipelas, 2; dropsy, 2; paralysis, 2; hypertrophy of the heart, anæmia, and old age, 1 each.

Of the 330 patients remaining in the asylum at the end of the year, 237 were foreigners, and only 93 natives of the United States.

Dr. Chapin's report is almost exclusively devoted to a description of the asylum buildings, which, although begun in the autumn of 1853, were not wholly completed until the year last past.

"The edifice comprises a centre building and four wings, and presents a front

of four hundred and fifty feet. The wings are each composed of an extension and a transverse portion or transept; the transept is eighty-six feet deep, and forms considerable projections in front and rear of the extensions, which are thirty-eight feet wide. The centre building and the four transepts are five stories, and the connecting extensions are four stories high, including the basements.

"The buildings are constructed of brick, with brown-stone water-table, window caps and sills, and are roofed with tin. A heavy cornice of galvanized iron, ornamented with square dentals of the same material, painted in imitation of brown-stone, surrounds the entire structure and contributes much to the architectural effect. A large dome surmounts the centre building, and upon each of the four transepts there is a handsome cupola. * * * * To guard against the possible spread of fire, double-plated iron doors have been hung over all the doorways connecting the wings with the centre and the outer with the inner wings; and the better to insure the escape of all the patients in the event of such a calamity—which latterly has not been unfrequent in institutions of this kind—extra stairways have been built in the new wings since they were completed."

The buildings are warmed by steam.

9. In the report of the *New York State Lunatic Asylum*, for the year ending November 30, 1860, we find the numbers which we are accustomed to extract to be as follows:—

	Men.	Women.	Total.
Patients at the beginning of the year . .	274	245	519
Admitted in course of the year	185	152	337
Whole number	459	397	856
Discharged, including deaths	177	162	339
Remaining at the end of the year . . .	282	235	517
Of those discharged, there were cured . .	52	53	105
Died	27	15	42

Causes of death.—Phthisis pulmonalis, 9; exhaustion from mental disease, 9; general paralysis, 9; paralysis, 6; suicide, 3; general debility, pleuro-pneumonia, erysipelas, apoplexy, congestion of the brain, and old age, 1 each.

The nine patients who died of general paralysis—the *paralysie générale* of the French writers upon insanity—were all men. One-third of the fatality in the male department was from this disease. From 1849, when the disease was first recognized in this asylum, to 1860, inclusive, the whole number of patients with this form of mental disorder who have been under treatment is 54. Forty-six of them have died.

Of the 337 admitted, 25 were received for the second, 10 for the third, 6 for the fourth, and 1 for the fifth time.

A large part of the report is occupied by special descriptions of the cases which terminated fatally in the course of the year.

In regard to the mental condition induced by alcoholic drinks, Dr. Gray differs in opinion from Dr. Harlow, of the Maine Insane Hospital, a portion of whose remarks we have already quoted. As it is our intention, in these notices, fairly to represent the views of each author of a report, and, where a diversity upon any subject exists, honestly to exhibit that diversity, rather than by a discriminating selection and suppression, to give especial prominence to such as coincide with our own, we extract at length the remarks of Dr. Gray upon the subject mentioned—

"The moral perversion under which many persons labour who are given up to inebriety, persuades some to look upon it as a form of insanity, rather than a vicious habit. The change of character often manifest; the periodic abandonment to excessive drinking, till reaching a full debauch; the penitence and promises afterwards; the craftiness in stealing away from friends at these periods of self-indulgence; the ultimate loss of self-respect in some, and disregard of the duties and responsibilities of life in all; the maintaining of an *irresistible impulse* to drink to complete gratification, and when arrested in the midst of a debauch, to return and complete it; all these are, by some, placed

to the credit of mental disease, and the destructive vice of intemperance is thus sheltered, and in some sense excused. Unfortunately, not only in the medical profession, but in the pulpit we have advocates for the recognition of this vice, in some of its phases, as belonging to the catalogue of "forms of insanity." Oinomania (an irresistible impulse to drink to drunkenness, in disregard of consequences or character) is the respectable name under which this vice would seek refuge from moral responsibility, and claim the sympathy and indulgence of society, in the gratification of an excessive appetite, self-induced. Some give way to these "paroxysms" of drinking, or, more properly speaking, debauches, maintaining that appetite becomes too powerful for resistance. Others, under some slight trouble, because somebody has slighted or wounded, or wronged them; or because they have, in some way, been disappointed; or because the world, or society around them, have failed to appreciate them; or, because they have become wearied or disgusted with the constantly perplexing duties and cares of life.

"We look upon one and all of these cases, as the voluntary abandonment of self to appetite, as progressive drunkenness, producing what might well be anticipated from vicious self-indulgence, namely, the loss of self-control, and the gradual, but sure degradation, and final demoralization of the individual.

"That intemperance may and does impair the mental faculties, no one can doubt. That it may and does produce insanity, is equally certain. That it is itself a form of insanity, under the name of oinomania, is not established, and the admission of such an error would be too fatal to morals to encourage for an instant.

"If an irresistible impulse to self-indulgence, disregard of the consequences flowing from such indulgence, and general demoralization, were the characteristics of insanity, intemperance might found some shadow of claim to be recognized as a form of the disease. On the contrary, insanity is more generally an immolation of self. An irresistible tendency exists to thoughts, feelings, and actions, at variance with the demands of appetite, and a course of life anything but promotive of self-gratification. In insanity there is but an apparent and temporary demoralization, induced by a beclouding of the mind in its knowledge of the relations of things, and a consequent loss, more or less complete, of the abstract ideas of right and wrong. In insanity, the irresistible tendency has a motive, or a purpose in view, above the simple gratification of appetite; and here disregard of consequences is the result of an absorbing active delirium, or a conviction that the wrong is, under the circumstances, the right.

"In these remarks, we do not intend to withdraw sympathy from the unfortunates who have fallen under intemperance, but merely to disavow the theory that it is a form of insanity, and to protest against receiving its victims into institutions of this character."

Whole number of admissions, from Jan'y 16, 1843 . . .	6,165
Discharged, recovered	2,445
Died	713
Not insane	45

Dr. Gray exhibits the incompleteness of hospital provision for the insane of the State of New York, and condemns the disposition to make the county poor-houses, and similar receptacles, a substitute for properly organized special institutions. P. E.

ART. XVI.—*The Principles and Practice of Obstetrics.* By GUNNING S. BEDFORD, A. M., M. D., Professor of Obstetrics, the Diseases of Women and Children, and Clinical Obstetrics, in the University of New York; author of "Clinical Lectures on the Diseases of Women and Children." Illustrated by four coloured lithographic plates, and ninety-nine wood engravings. 8vo. pp. 731. S. S. & W. Wood: New York, 1861.

A CAREFUL examination of the work of Dr. Bedford has convinced us that it is destined to find favour with both the student and practitioner of obstetrics. We shall not stop to inquire whether a new treatise of the kind was or was not demanded. The question is one with which we have nothing to do. We receive the present addition to our professional library with thankfulness, and the hope that it may secure the patronage to which it is justly entitled. It is unquestionably a faithful exponent of the principles and practice of midwifery in all their several relations, which it will be found to have brought up very fully to the existing state of our knowledge. In its pages are embodied, not merely the clinical observations and practical deductions of the author, but the established views and well-confirmed experience in reference to the several subjects embraced in it, set forth in the writings of the best obstetrical authorities, as well of the present as of former periods, of our own as of other countries.

Systematic in its arrangement, and clear and explicit in all its teachings, it appears to be, at the same time, full in all that is requisite to communicate a correct view of the anatomy and physiology of the female pelvis and organs of generation —the physiology of reproduction;—the signs, concomitants, and pathology of pregnancy;—the physiology of the fœtus; its relations with the pelvis; the causes and consequences of its premature expulsion from the uterus; all that is required to develop the phenomena of parturition in their various phases—whether as presented in the commencement, course, and completion of natural labour, of labour complicated by a plurality of fœtuses, displacement of the uterus, convulsions, etc., or of preternatural labour—labour requiring for its completion manual or instrumental assistance. Equally satisfactory is the author's treatment of whatever relates to the management of the several forms of labour, and of the more important diseases of the puerperal state.

The effort of Dr. Bedford, in all his practical teachings, has evidently been directed to enable his readers to form a just estimate of the powers of nature for the accomplishment of delivery in each case of labour, with entire safety to both mother and child: to the end that, on the one hand, there may be no unnecessary delay in resorting to manual or instrumental assistance when this becomes absolutely necessary, nor, on the other, a reckless interference, in any form or manner, when parturition is proceeding naturally and regularly towards a favourable termination.

The views set forth in the chapters which treat of embryotomy, the Cæsarean section, and the induction of premature labour, may be consulted by the student and practitioner of obstetrics with profit. We believe that a candid examination of the facts upon record in reference to the subject, will bear out fully the truth of the position assumed by Dr. Bedford that, "if the child be alive, the woman at the completion of her pregnancy, and it be made manifest that the maternal passages are so contracted as to render it physically impossible that a living child can be extracted *per vias naturales*, he should, between the two resources—craniotomy and the Cæsarean section—not hesitate to decide in favour of the latter."

In cases, however, where we are well convinced, from the very inception of pregnancy, that a live child cannot be born at the full term, and that, to afford a chance of safety to the mother, our only choice is between a resort to embryotomy or the Cæsarean section, we have, in the induction, at the proper period and by proper means, of premature labour, a procedure through which, as is shown by well-authenticated statistics, "considerably more than one-half of the children are rescued, with the insignificant mortality of one in fifty of the mothers."

The question as to the propriety of the induction of premature labour, in cases of excessive vomiting during pregnancy, involving the life of the mother, is mooted by Dr. Bedford. Although he does not answer it definitely, either affirmatively or negatively, believing it to be one of sound judgment rather than of controversy, and to be determined by "a searching review of all the surrounding circumstances of each individual case," yet he evidently believes that a resort to it is justifiable in order to save the lives of both mother and child in certain cases of uncontrollable vomiting occurring in the pregnant female. To dispute the possibility of the occurrence of such cases would be folly: we can only say that, in a practice of forty-five years, we have never met with any such.

The subject of abortion—its causes, phenomena, and management—is treated of at great length, and with uncommon ability.

We would direct attention to the chapters on puerperal fever, puerperal convulsions, and puerperal mania. In these, Dr. Bedford has succeeded in presenting, with great conciseness, correct views in respect to the pathology of the affections referred to, and a fair exposition of the most judicious therapeutical plan for their treatment.

We cannot compliment the author upon the excellency of his pictorial illustrations. Coarser specimens of wood engraving than those the work before us presents our eyes have seldom encountered; while the four coloured lithographic plates fall sadly behind those of Montgomery, from which they profess to be copied. The mechanical execution of the work, in other respects, is unexceptionable.

D. F. C.

ART. XVII.—*Placenta Prævia; its History and Treatment.* By WILLIAM READ, M. D., etc. etc. 8vo. pp. 340. Philadelphia, 1861: J. B. Lippincott & Co.

DR. READ has here furnished us with a most interesting book, on a most important subject. A case of labour can but seldom present itself in which promptitude of action in the right direction is more essential to insure the safety of mother and child than one complicated with placenta prævia. There is no case in which is so imperatively demanded, on the part of the accoucheur, the complete exercise of all his faculties, united to perfect coolness, and sobriety of judgment. Error here admits of no rectification; there is no time to undo what has been done wrong, while a single false step may place the patient beyond the power of rescue.

For a long time it was believed that the proper treatment of placenta prævia was fully settled, until about seventeen years ago Professor Simpson advocated the plan of artificially detaching the placenta, as the rule of practice under certain limitations. The promulgation of this new plan gave rise to not a little controversy among obstetricians, and even at the present time there is much difference of opinion as to the extent of its applicability, and its actual value in comparison with that previously pursued.

The question in respect to the treatment of placenta prævia is still an open one. To determine whether the long-established practice of speedily terminating the labour by a resort to version by the feet, or the more recent proposition of an artificial detachment of the placenta, with no further manual interference is best adapted to preserve in the larger number of instances the life of the mother and of her child.

The question requires a more extended basis of statistical evidence—the result of a careful analysis and collation of a sufficiently extended series of well-attested cases, of which we have a full and accurate history.

To present such statistics is the object of Dr. Read in the work before us. He has, with no common amount of industry and research, collected over *one thousand cases* of placenta prævia. All the particulars in respect to the great majority of which he assures us have been obtained from the original reports. These cases he has arranged in a tabular form. The first eight tables embrace 891 cases quoted from the original histories, and four other tables, which follow

as an appendix, embrace 114 cases, obtained at second hand. Presenting a total of 1005 cases.

Table 1, of the first series, exhibits the results of 52 cases in which the placenta was spontaneously expelled, and the child born by the unassisted uterine contractions. All these cases are set down as having terminated favourably in respect to the mother; in only 11 was the child born alive. The presentation of the placenta was complete in 11 cases, partial in 7. In 14 cases the head of the child presented; in 3 the head and arm; in 2 the back; the feet and the abdomen each in one case, and in one case the funis, with both arms and one leg.

From the facts presented by this table it is shown that the death of the child does not necessarily result when the placenta is first thrown off.

Table 2 exhibits the results of 26 cases of spontaneous separation of the placenta, with artificial delivery of the child, in consequence of the inefficiency of the pains. Twenty-one of these cases terminated favourably in respect to the mother. The fate of the child is noticed in only 19 cases, in 2 only are the children reported as having lived. Both these were delivered by turning, and immediately after the expulsion of the placenta. In one the shoulder presented, in the other the presentation is not stated. In 17 cases in which the children are reported as having died, 10 were delivered by turning, 5 were mutilated, and 2 drawn down by the presenting feet. The presentation of the placenta is noticed in one instance only—when it was partial. In 3 cases the child's head presented; in 8 its arm, in one of these with the cord; in 3 its shoulder, in two of these with the cord also; in 2 its foot; in 1 its elbow; in 1 its umbilicus; and in 1 its knee, with cord first, then its breech.

Table 3 exhibits the results of 31 cases, in which the placenta was artificially separated, and the child delivered by the natural pains. Twenty-eight of these terminated favourably for the mothers. The children were born living in three instances, all of which were presentations of the head alone. The presentation of the placenta was complete in 16 cases, partial in 7 cases. The child presented by the head in 23 cases—in 3 of these with prolapse of cord; by head and arm in 1 case; by head and hand in 1 case; by the feet in 2; and by the breech in 1.

Table 4 presents the results of 51 cases in which both placenta and child were artificially delivered. In 40 of these the mothers survived, but the children in only 9 cases. The presentation of the placenta is recorded in 31 cases—in 25 of which it was complete, and in 6 partial. In only 29 cases is the presentation of the child given. It presented by the head in 14 cases; by the head and arm in 1; by the arm in 7; by the arm and cord in 1; by the shoulder in 2; by the breech in 1; by the feet in 2; and in 1 the presentation was of the funis. There were 39 cases of turning; 6 of craniotomy; 4 of forceps; and *two* of delivery by hand. The result to the mother was in the cases of turning 31 recoveries to 8 deaths; in those in which the forceps were employed, there were 2 recoveries and two deaths; in those in which craniotomy was performed, there were 5 recoveries and *one* death; in those where the delivery was by the hand simply, there were 2 recoveries and *no deaths.*

Table 5 presents the results of 123 cases in which the placenta was partially detached, followed by the spontaneous delivery of the child. The mothers, in 109 of these cases, recovered. In 111 cases in which the result to the child is given, 56 are reported to have lived. The presentation of the placenta was complete, or nearly so, in 18 cases; partial in 72; a large portion of it protruding through the os in 3; and nearly detached in *one.* The child presented in 76 instances by its head, in 6 by its breech, and by its feet in 4. In 37 cases, the presentation is not given.

Table 6 presents the results of 557 cases in which, with partial detachment of the placenta, the artificial delivery of the child was found to be necessary. In 416 of these cases the mother recovered. In 223 cases, the children are stated to have been born alive, and dead in 246 cases; leaving 88 cases in which the result in respect to the children is not recorded. In 310 of the cases only is the presentation of the placenta given; *viz.*, 193 in which it was complete, and 117 in which it was partial. The head of the child presented in 109 cases—in 6 of these with the cord, in 1 with the hand; the feet presented in 13 cases; the arm

in 6; the breech in 7; the shoulder in 5, in one case, with prolapse of the cord; the knee in one case; the foot and knee in one; foot and cord in one; right hip in one; umbilicus in one; and in one case the child presented transversely. In 410 cases, the presentation is not given.

Table 7 presents the results of 39 cases in which the placenta was perforated, and the child variously delivered. In 29 of these cases, the mother survived. Twelve of the children are reported to have lived, and 20 to have died. In 7 of the cases, the result in respect to the children is not stated. The presentation of the placenta is stated to have been, in 25 cases, complete, or very nearly so. The child presented by the head 16 times, and by the foot and hand or arm twice. In 21 cases, the presentation is not stated. Delivery was effected by turning in 28 cases; by the efforts of nature in 7; craniotomy was performed in one case; forceps were used in one case; and the child was drawn down by the feet in two cases. Of the mothers who died, all were delivered by turning, with one exception—the case in which craniotomy was performed.

Table 8 presents the particulars of 32 cases in which the mother died undelivered. Although, as Dr. R. remarks, these cases have no weight in determining the relative value of the different modes of treatment, they are, nevertheless, important in determining the fatality of placenta prævia. The presentation was, in 20 of these cases complete, in 2 partial. The particular extent of its presentation is not noted in 10 cases. The presentation of the child is recorded in only 7 cases; in 6 of these it was the head, in 1 the breech.

Previously to entering upon the statistics of placenta prævia, Dr. R., after presenting a very complete sketch of the literature of the accident from the earliest period of medical history up to the year 1776, when Leroux de Dijon, in his work on the hemorrhages incident to parturient females, first pointed out the true character of the loss of blood attendant upon cases with placental presentation, and indicated the tampon as the best and most certain means for its arrest. Dr. R. discusses the frequency of the occurrence of the accident—so far, at least, as we may be permitted to draw any conclusions in this respect from the facts in our possession; its diagnosis; its physiology—involving, of course, the physiology of the placenta; and the special causes of the hemorrhage which takes place in this accident so soon as the term of gestation draws towards a close and the process of labor sets in. Each of these points is discussed with a fulness commensurate with its importance and the extent and character of our acquaintance with it. The four chapters of the treatise devoted to the consideration of the topics just indicated, are replete with interest; they exhibit throughout, in a very favourable light, the capacity of the author for the faithful investigation of the questions at issue in respect to the several subjects of which he treats, and his entire familiarity with the contributions towards their elucidation that have been placed on record at different periods and by different authorities.

This portion of the work forms an almost essential introduction to the analysis and collation of the cases collected by Dr. R. Although in respect to all that concerns the progress and results of placenta prævia, and to the treatment best calculated, when it is present, to save the life of both mother and child, it is scarcely possible to arrive at a safe and certain decision, excepting from ample clinical experience; still, a clear understanding, of the nature of the utero-placental connection, and the cause of the hemorrhage which results during labour, when the placenta is implanted at or over the os uteri, is all important to enable us to employ understandingly whatever facts are supplied us for the solution of the momentous question, What is to be the conduct of the obstetrician when he meets with a case of placental presentation?

We present entire the general summary of the results which Dr. R. has deduced from the analysis of the cases of placenta prævia collected by him.

In introducing this summary he remarks that of all the cases he has tabulated six hundred and seventy, or more than two-thirds, come under the denomination of "partial presentation," showing, most conclusively, that the method proposed by Prof. Simpson, will be available in only a small fraction of cases, and that the old practice of turning and delivering by the feet, without disturbing the connections of the placenta any more than is necessary for the purpose, must,

after all, be our main resort—and the method which in the mass of cases coming under charge, will most likely be required.

The following are the general conclusions at which Dr. R. has arrived from the data accumulated by him:—

"1st. The danger to the mother in placenta prævia *increases* as the period at which the labour comes on approaches the full term. A result rather to be expected from the increased capacity of the uterine vessels, as pregnancy advances to its termination. It is, therefore, better to terminate the labour, after it has really begun, as soon as compatible with the safety of the patient, than to endeavour to conduct the pregnancy to the full term.

"2d. The danger to the mother is less when the os uteri is completely covered, than when a portion only is involved in the attachment of the placenta, and least of all, where the attachment becomes nearly or quite central with reference to the os. Under these last conditions there is a strong probability, if the contractions are vigorous enough, that the placenta will be thrown off, and expelled into the vagina, and the hemorrhage be checked.

"3d. The *condition* of the mother is a much more important element in making a prognosis of the case, than the amount of blood lost; some constitutions being very much less susceptible to the effect of depletion, and capable of sustaining a greater amount of hemorrhage without being unfavourably affected, than others. The condition of the mother, then, should be most carefully watched, and the appearance of any symptoms indicating debility, or a tendency to collapse, should be the signal for the adoption of such remedies, or such a course as will the most speedily and safely insure the delivery of the child. And they should be put into effect without any delay, always bearing in mind the fact, that operations which are perfectly safe for the mother, when her vital power is comparatively unimpaired, becomes almost certainly fatal, if performed when she has become exhausted by hemorrhage and suffering.

"4th. In those cases where the pains are vigorous, and show a disposition to be permanent—the head presenting, the os in good condition, and the strength not materially impaired—*rupturing the membranes*, by letting off the waters, and bringing the child's head down upon the os, will, in most instances, be enough to check the bleeding, and place the mother in a safe condition. When, however, a want of tonic power is manifested, or it is probable that resort must be had to forced delivery, the discharge of the waters in this way will only increase the difficulty of the operation, and the danger to the mother.

"5th. The danger to the mother is materially increased by artificial delivery. But the same statistics which show this result, also make it evident that this increased fatality is owing, *not so much to the operation itself*, as to the enfeebled and exhausted condition of the mother at the time; and that, with a favourable condition on the part of the mother, there is no more danger in resorting to it in placenta prævia, than in ordinary cases of difficult labour.

"6th. The effect of artificial delivery to endanger the life of the mother in placenta prævia, being, therefore, almost directly proportionate to the degree of exhaustion under which she labours, it should be the aim of the practitioner to perform this operation, before such a state is reached; always bearing in mind the remark of Dr. Churchill, that, 'it is peculiar to midwifery operations that they form an ascending series, increasing in gravity from the simplest to the most severe—no two being equal, and therefore, in considering the suitability or practicability of any one, we do so with the knowledge that if the one we prefer do not succeed, we must have recourse to another more severe and more dangerous.'

"7th. If, from the progress of the case, or the conditions of the labour, a resort to artificial delivery must be finally had, it should not be delayed an instant beyond the time when the dilatation, or dilatability of the os uteri permits the introduction of the hand into the uterus. The danger to the mother from forced delivery being directly proportionate to the degree of exhaustion under which she labours.

"8th. When from the rapidly failing condition of the mother, or the presence of any cause rendering artificial delivery impossible, a resort to the foregoing is forbidden, the placenta should be wholly separated from the uterus, and such

remedies made use of (as one of which our attention is directed to transfusion) as will recruit the strength of the mother, until reaction having been established, she can be delivered in whatever way may be deemed best.

"9th. The tampon may be used advantageously in all those cases where, with an amount of flooding, sufficient to affect materially the constitution of the mother, the os uteri remains so rigid that it is impossible to perform artificial delivery. But, while under these circumstances, it is important to gain time for the dilatation of the os, and at the same time prevent the hemorrhage from too speedily exhausting the mother; under an opposite state of things a resort to the tampon, by inducing this temporizing policy, will often cause a loss of valuable time, and in this way make just the difference between a safe and a fatal issue. As the effect of this application is not only to check the hemorrhage, but also to excite labour-pains and dilatation of the os uteri, it is totally forbidden, in all cases where either or both of these results may not be desired.

"10th. The effect of ergot being of a twofold nature, according to the condition of the system—ecbolic, or parturient when the nervous energy is undiminished, and stimulant when there is a want of this—it should not be administered, when there is a probable necessity of terminating the labour by an operation, unless at such an interval, that the effect of it is either exhausted, or will not come on until after the operation is finished, or the condition of the mother is such that it will act merely as a stimulant.

"11th. In all cases where the exhaustion is excessive, and version is the only alternative, after the feet have been brought down, the body of the child should be left undelivered, until the uterus has been roused to contract, and a firm condensation of its walls has been secured; or, at least, the body should be withdrawn so slowly as to prevent the evil consequences which sometimes follow too sudden delivery."

From a careful study of the foregoing tables, which present, confessedly, the best authenticated and most extended series of statistics in reference to the subject of placenta prævia that have been as yet compiled, it will be found that the largest amount of safety is afforded to both mother and child, in cases of placental presentation, by an early and complete separation of the placenta, while the completion of the labour is trusted, in every case where it is possible, to the natural efforts of the uterus. The tables exhibit, also, in the strongest point of view the extreme danger to the mother attendant upon the former practice of breaking through the placenta, or even detaching it at one of its edges, for the purpose of reaching the feet of the child to bring these down and thus effect its delivery.

In the July (1861) number of the *Glasgow Medical Journal*, there is a communication from Dr. Chas. Clay, of Manchester, late Senior Medical Officer of St. Mary's Hospital of that place, and Lecturer on Midwifery and Diseases of Women and Children, on the subject of placenta prævia. Presenting as it does the result of a long and extensive experience in obstetrics, the communication becomes, in this respect alone, one of very considerable interest and importance—an interest and importance which are augmented by the confirmation the observations of its author affords to the general conclusions deducible from the ample statistics collected and arranged by Dr. Read.

"In cases of placenta prævia," Dr. Clay remarks, "repeated examinations cannot be too severely condemned. The one examination to ascertain the facts of the case should, if possible, be followed by prompt and energetic means to check the hemorrhage by detachment, and thus facilitate subsequent delivery by the efforts of nature only. If the hemorrhage ceases on the detachment of the placenta, the delivery may with great propriety be waited for, and without danger. I have scarcely known an instance to the contrary. In reference to the old plan of version and immediate delivery, for which the detachment of the placenta is proposed as a substitute, there is in the first place the heavy rate of mortality of 1 in 3 to the mother and 1 in 2 to the child, increased considerably if those cases are treated separately. Where the turning and delivery are effected when the dilatation of the os uteri has only just begun, that is, only to admit the point of one finger, or to within the size of a shilling at most—a rate of mortality would be shown which I do not hesitate to place at near 50 per

cent. to the mother, and almost universally fatal to the child. These figures have to be compared with 1 in 44 to the mother, and 1 in 5 to the child, where the placenta is detached. Secondly, there is the probability of means having been previously tried to check the hemorrhage by rupturing the membranes, or giving ergot, *or both;* either of which will immensely increase the difficulties and dangers attendant on subsequent version. Thirdly, if the os uteri is but very slightly dilated and not disposed to do so, the violence done by attempting to turn is very serious and the difficulties of version increased. Fourthly, if the hemorrhage occur before the period of utero-gestation is completed (the seventh month for instance), the os is certainly not prepared for *extensive* dilatation, and I do not believe it ought to be subjected to such extreme treatment. Fifthly, the danger of waiting for a sufficient state of dilatation to effect version judiciously (say to the size of half-a-crown, as generally admitted by the best authorities), and the great loss of blood in the interim, when the hemorrhage can be at once checked and the waiting for natural expulsion justified, by the simple process of detachment. Sixthly, in almost all cases the prostration is often so great that even the necessary efforts of version will in very many instances hasten death.

"I am convinced from long experience, that the dangers of version and hemorrhage may in a great measure be done away with by the simple detachment of the placenta. I have never known it to fail, nor do I believe it will ever fail, if the detachment is completely and properly effected. We have also the highest authorities for stating that the arrest of hemorrhage is complete in 19 out of 20. If even then for the sake of argument we admit one failure in twenty cases, the results of detachment would stand immeasurably superior to the old (and I trust soon to add obsolete) system of version and immediate delivery."

"It has been objected," says Dr. C., "to detach at the seventh month, the os not being dilatable; but I have found it as easy dilatable at the seventh as at the ninth month, I mean *so far* as is necessary for detachment only, and therefore believe the objection to be more ideal than real. Then, again, if it be an objection, how much more objectionable must it be to dilate more extensively as in version and delivery, where the violence must of necessity be greater? Others argue that the fœtus may be retained for days after the detachment, and fever may arise, but as no facts have been advanced to confirm such an opinion, it can only be entertained as a mere supposition. I have never seen the fœtus retained, and consequently no case of fever from such a cause has ever come under my notice, and certainly it does not apply to cases of fœtus dead *in utero* from other causes. After all, there is such a remarkable difference in the statistics on these important questions, that I should consider any person reckless indeed of human life, who would advocate turning and delivery in cases of placenta prævia in preference to detaching the placenta, if at all aware of these results. But I think few could be found to go further than either of these doctrines, and advocate forcible dilatation at early periods, or attempt turning with the os only capable of receiving the point of the forefinger, or at most dilated to the size of a shilling; increasing the already too great mortality, and adding greatly to the future difficulties to be contended with."

"In conclusion," Dr. C. observes, "I have never witnessed any bad consequences from detaching the placenta; there is infinitely less violence done, the danger is much reduced, future difficulties are of less importance, and the results far more favourable. And with the accumulated facts of the past forty years, from individuals of the highest standing in the profession, we may safely hope never so far to retrograde as to adopt the old and barbarous system of boring through the placenta, turning, and delivering the child. But even if we should be so far led astray as to accept this old barbarism, let us at least escape the opprobrium of attempting such practices in the earlier stages of dilatation of the os uteri, and *knowingly* increasing all the dangers attendant on such cases."

D. F. C.

ART. XVIII.—*Guy's Hospital Reports.* Edited by SAMUEL WILKS, M. D., and ALFRED POLAND. Third Series, vol. VII. London: John Churchill, 1861. 8vo. pp. 392.

THE present volume of this valuable publication contains seventeen original communications, and seven lithographic plates. As has been for some time past our practice, we shall lay before our readers a full analysis of its contents:—

I. The first article in the number is entitled *The Surgery of the Mouth, Pharynx, Abdomen, and Rectum, including Hernia.* By THOMAS BRYANT. This is the third of a series of articles, being published by Mr. Bryant in the *Reports*, that are intended to illustrate, from cases that have occurred in Guy's Hospital, the surgery of the different regions of the body. In the two preceding articles the clinical surgery of the nervous, respiratory, and circulatory systems was considered.[1]

The source from which the material for the present paper is drawn is thus tabulated:—

Diseases.	Cured or relieved.	Died.	Total.
Hare-lip	46	1	47
Cancer of the lip	52	2	54
Affections of the tongue	27	3	30
Affections of the palate, tonsils, and pharynx	44	—	44
Stricture of the œsophagus	14	2	16
Contusions of the abdomen	53	1	54
Ruptured viscera	4	13	17
Strangulated hernia—			
Inguinal	108	26	134
Femoral	103	47	150
Umbilical	13	5	18
Anal abscess and fistula	236	—	236
Hemorrhoids	61	—	61
Stricture of the rectum	45	3	48
Other affections of the rectum	31	—	31
Total	837	103	940

These cases, it may be interesting to know, were admitted into the Hospital from October 1, 1853, to March 30, 1861, or in a period of seven and a half years.

Of the cases of *hare-lip*, only one-half were simple; fissure of the hard and soft palate existing in at least 50 per centum. In all but three an operation was performed, and with a good result, except in four cases. A boy, aged eleven days, died four days after the operation, from which he never rallied; and in three cases, aged respectively four weeks, five weeks, and five months, the parts subsequently separated after operation. In two of these three cases the operation was repeated with success; in the third case, aged five months, a second operation was postponed till the child's health had improved.

From the consideration of these cases, we see the propriety of deferring all operative interference in cases of hare-lip until the vital powers of the child have become established, and able to resist a certain tax upon their strength. If, however, the existence of the child should be endangered by inability to suckle, or if, as we have known, it should be regarded by the parents as a repulsive object and purposely neglected, the surgeon ought to endeavour to remedy the deformity without delay.

The period fixed upon by Mr. Bryant as the most favourable for operating is about the third month. This, provided the patient be in good health, is pro-

[1] For an analysis of these articles, see the numbers of the Journal for January, 1860, and July, 1861.

bably correct so far as simple cases are concerned; but in those complicated with projection of the intermaxillary bone, or with cleft bony palate, cases in which the operation is attended with dangers and difficulties, we believe ourselves that it should be deferred until the child is fully three years of age.

The plan of operating for the relief of this deformity, described first by Malgaigne, is strongly recommended by Mr. Bryant. It possesses the great advantage of preventing the little notch, left almost constantly at the extremity of the cicatrix, on the free edge of the lip, after the ordinary method of operating. This plan consists simply in paring the edges of the wound from above downwards, leaving the inverted flap adherent at its labial border. The divided lips being brought together above, the lower flaps may be connected by a fine suture, and if they are found to be too long it is easy to curtail them. An important modification of this operation, with which Mr. Bryant cannot be acquainted, or he would certainly have recommended it, has been made by Nélaton, in whose hands we have repeatedly seen it effect a very perfect result. In place of forming two flaps, Nélaton prolongs the incisions beyond the angle of the cleft in the lip where they meet, so that the parts detached from the lip represent the letter V inverted; they are then turned down and form below the lip the same letter V, but in its usual position. In order to perform this operation well the angles of the lip must be hooked by a tenaculum. After the parts are turned down the sides of the lozenge-shaped opening which is left are placed in contact by one suture to prevent the depressed flap from returning to its position. The advantages of this method of operating are very great; a child must suck, and he will cry and rub his lips; all this destroys the dressings placed over the parts, and the sutures ulcerate and become loose. When, however, this operation has been performed, the edges swell and become covered with granulations, and a *natural suture* is formed, and remains even if the others do give way, and exactly at the inferior part of the lip, where it is most needed. Even if primary union does not take place, secondary union does, just as regular, and just as complete.

Under the head of *cancer of the lip*, Mr. Bryant includes all cases of cancer, and of epithelioma or cancroid of the lip. Of the 54 cases, 3 took place in women; and in 52 of the 54 the disease attacked the upper lip. This position of the disease and its attacking only the male sex are totally unintelligible points. If they were understood we might probably know more in regard to its concealed causes. We feel considerable curiosity ourselves as to whether the three women exceptionally affected were in the habit of smoking tobacco in clay pipes. If they were all smokers, the fact of their becoming affected when cancroid of the lip is so very rarely seen in women, would furnish the strongest argument we have yet met with in favour of pipe-smoking being a cause of the affection.

The treatment recommended by Mr. Bryant is that generally adopted by surgeons, namely, early excision, repeated at the earliest reappearance of the disease.

No cases of diseases of the gums, not even of epulis, are given by Mr. Bryant, and in the chapter on *diseases of the tongue*, we find nothing calling for notice unless it be the treatment recommended for sublingual cysts. A moderately free opening is made into the cyst, and its cavity is then freely plugged with lint so as to excite inflammation of its walls.

In *tonsillitis*, in the early stage, gum guiacum, which he generally prescribes in the ordinary form of the mistura guiaci of the London Pharmacopœia, is said by Mr. Bryant to possess a most marked beneficial influence. In all the cases of *chronic enlargement of the tonsils* excision was performed, and generally with the guillotine.

Of *tumours of the pharynx*, those hard, fibrous growths, from the upper part of the pharynx or the base of the skull, two cases are very briefly related. In one case, he says that these tumours should be removed by ligature passed through the nose by means of a double canula; and in the other, that the tumour "was found to have been malignant." He adds, that though of interest pathologically, but little can be done surgically for their removal. Mr. Bryant, consequently, appears to be unacquainted with the successful operations of Flobert and of Nélaton, and of other French surgeons, for the extirpation of these fibrous growths.

The chapter on *contusions of the abdomen and ruptured viscera*, notwithstanding the importance of the subject, contains nothing calling for particular notice, the chief practical points being the same with those in Mr. Poland's contribution on the same injuries in the 4th vol. of the *Reports*, noticed in the *Journal* for April, 1859.

Though the chapters on *Strangulated Hernia* in Mr. Bryant's paper, do not contain much that is novel to the profession, yet the analysis of the large mass of material in his possession, and the deductions to be drawn from it, cannot fail to prove interesting. As seen in the table, over three hundred cases of strangulated hernia are recorded, a number quite sufficient to yield important conclusions. The use of statistics is an easy and, therefore, a favourite subject of ridicule, but with us no considerations are regarded with greater interest and possess greater weight than those drawn from "registered experience."

According to Mr. Bryant's table of 100 cases of strangulated hernia, 50 are inguinal, 44 femoral, and 6 umbilical. Now, as we know, from the report of the City of London Truss Society, that out of every 100 cases of hernia, 84 are inguinal, 10 femoral, and 5 umbilical (the fraction being divided between the three), femoral hernia must be nearly eight times more subject to strangulation than inguinal.

As regards the relative frequency of the successful application of the taxis and herniotomy in the different forms of strangulated hernia it appears that in every 100 cases of inguinal, 36 require operation, and 63.9 are reduced by the taxis; in every 100 cases of femoral, 73 require operation, and 26.7 are reduced by the taxis; and in every 100 cases of umbilical, 27 are operated upon, and 73 are reduced by the taxis.

The following table illustrates clearly and briefly the various points elucidated by Mr. Bryant's statistics expressed in percentages. It is impossible for any surgeon to consider it with care without perceiving that it brings before him many and important facts:—

FORM OF HERNIA.	Frequency of Occurrence.	Per cent. Strangulated.	REDUCED BY TAXIS.		REDUCED BY HERNIOTOMY.		SAC OPENED.		SAC NOT OPENED.		Mortality of whole number strangulated.
			Per cent.	Mortality.	Per cent.	Mortality.	Per cent.	Mortality.	Per cent.	Mortality.	
Inguinal	84	50	64	3.8	36	52	80	60	20	22	21
" congenital		24	57	0	43	38	84	45	15	0	17
" recent		5.7	28	0	72	100	80	100	20	100	71
" old		70	70	5	30	50	77	60	23	1.6	19
Femoral	10	44	27	10.5	73	42	56	50	43	30	33
" recent		21	32	0	68	66	38	87	62	54	45
" old		78	25	14	75	36	62	45	38	22	30
Umbilical	5	6	73	10	27	80					27

The deduction made by Mr. Bryant from this table in regard to opening the sac in the operation for the relief of what is called *strangulated* hernia is decidedly unfavourable thereto. According to it, in all cases of inguinal, femoral, or umbilical hernia, recent, old, or congenital, the mortality is less when the sac is not opened; and Mr. Bryant, as a consequence, very justly remarks, "the surgeon is hardly justified in taking an unnecessary step by opening the sac when no benefit but some harm appears to result." He adds also: "It may be a satisfactory thing on the part of the surgeon to know the condition of the hernial contents, but practically such knowledge is of little use; and unless it can be proved that such an inspection is of any value the opening of the sac must be regarded as unnecessary." We shall not stop to attempt to prove the value of inspection of the bowel in suspicious cases, though many surgeons would prefer making sure not to return it in a state of mortification, but call attention to the fact that Mr. Bryant ignores totally anything like stricture at the neck of the sac itself. In no place does he refer to it. Now, undoubtedly, the chief reason for opening the sac is to search for stricture at its neck, for autopsies after

operations have repeatedly shown the intestine strangulated in the sac and by the neck of the sac itself.' Malgaigne, in his celebrated memoir on the subject, denies that strangulation is ever produced by the fibrous orifices through which the sac passes, and, though this may be an extreme opinion, it is not, practically, so dangerous a one as that which ignores totally all strangulation except from these orifices. It is from a want of attention to this fact that Mr. Bryant does not state whether or no the patient has worn a truss, for the pressure of this instrument, as Sharp long ago remarked, by bringing the two sides of the sac almost into contact with one another at that part near the rings of the abdomen, gives rise to a stricture in its entrance or neck. His statistics would have had far greater interest to us had he mentioned this circumstance, for a truss having been worn would tell us at least that the sac had a neck, where the seat of stricture might possibly be.

There is another observation to be made in regard to Mr. Bryant's cases of *strangulation*, which is, that the constriction in all of them was very certainly not very tight. We read, for instance (Case 3, page 50), that on admission the *strangulation* had existed for five days, and yet the intestine was reduced and the man recovered. Now, as a matter of course, there is no *strangulation* in cases like this, for the parts would then have long been perfectly dead. It is, we conceive, highly improper to style such cases cases of strangulation from the influence the name has upon the practice. An affection is styled a *strangulated* hernia, and the surgeon hastens to divide a stricture; if styled *inflamed* hernia, as it really is, he would endeavour to diminish the inflammation by local and general measures, and then when the inflammation shall have subsided, if the hernia be reducible, endeavour to return it to its normal position.

It does not require much reflection to perceive that this question is not merely one of words, nor one of solely pathological interest, but a question that interests most deeply the life of the patient. Statistics show us that the operation for strangulated hernia is one of great fatality, and a correct view of the question before us will spare many men the risk of its dangers.

On the *after-treatment* in cases of so-called strangulated hernia reduced either by the taxis or by operation. Mr. Bryant makes some very useful remarks, in which he points out that the object of the surgeon is unquestionably best carried out by preserving rest of the injured or inflamed parts, and that opium, in moderate doses, is therefore indicated. Respecting purgatives there are few, if any, cases in which they should be employed; so soon as the injury sustained by the bowel is repaired the natural functions of the intestine will return and an evacuation will follow.

For the treatment of *fistula in ano*, Mr. Bryant says that but one operation appears to be of benefit, and that is the division of the sphincter. The injection of the sinus was attempted in a few of the cases, and with no great success. As respects the connection between phthisis and fistula, Mr. Bryant's experience is quite remarkable; for in only three of the cases was there any symptom of pneumonic phthisis, and the majority of the patients presented no more severe cachectic symptoms than exist in any other class of hospital patients.

In 23 out of the 61 cases of hemorrhoids a palliative treatment was sufficient. The patients were kept on low diet in the horizontal position, and a pill of 1 gr. of pil. hydrargyri and 3 grs. of ext. conii was given twice a day, with an oleaginous mixture. In the more severe cases, when the piles were external (in 17 cases) they were excised, when internal they were ligatured or destroyed by the application of nitric acid; the ligature being used when some portion only of the bowel's circumference was involved, and the acid when the disease was more extensive.

The other diseases treated of in Mr. Bryant's paper are *prolapsus*, *painful ulcer*, *polypus*, and *stricture of the rectum*, but we have found nothing to remark in these four chapters except the fact that they are all exceedingly meagre and unsatisfactory.

' See Broca "De l'Etranglement dans les Hernies," &c. Paris, 1853, p. 94. This point is particularly dwelt upon by the old English surgeon Sharp, "Critical Inquiry," &c. London, 1750, page 32.

The whole of this paper, like the one preceding it in the series, bears everywhere evidence of haste in its preparation.

II. *Remarks on Kiestine, and its Existence in the Virgin and Sterile States.* By J. Braxton Hicks, M. D.

In this paper, after some preliminary observations upon the nature and tests of kiestine, Dr. Hicks brings forward seven cases to show that it may exist in the urine of a person not pregnant, and who never had been. One of them (Case V.) is quite conclusive on the subject. It is as follows:—

"——, healthy young woman, æt. 21; imperforate hymen; retained menses; vagina distended to the utmost, and uterus about the size of a large fist, as far up as umbilicus. Kiestine well marked; no milk in breasts."

III. *On Syphilitic Blotch of the Conjunctiva.* By John F. France.

The peculiar manifestation of syphilis described by Mr. France, in this communication, must be exceedingly rare. We have never seen it referred to by writers on the venereal; and Desmarres, in his *Maladies des Yeux*, states, that he has never seen on the oculo-palpebral conjunctiva either *plaques muqueuses*, or, *copper-coloured eruptions*.

The *syphilitic blotch* of Mr. France, of which Mr. Smee first reported a case, in 1844, in the *London Medical Gazette*, is described as a limited and well-defined discoloration of the mucous membrane of the globe, which, within the affected area, is slightly thickened and raised; but not conspicuously, if at all, more vascular than the neighbouring surface. There does not seem to be any disposition to ulceration, as when the margin of the lid is attacked with syphilis; there is no pain, and no morbid discharge.

Three cases of this affection, occurring in a man, a woman, and a child, are related, and a coloured plate, representing their eyes, is attached to the communication.

IV. *Obstruction of the Superior Vena Cava, at its Termination in the Heart.* By G. Owen Rees, M. D.

Three cases related in this interesting paper illustrate: 1st. Obstruction of the superior vena cava from fibrin, "evidently of old date, being very tough, and closely incorporated with the walls of the vessel, and converting it into a solid cord." 2d. Obstruction from a remarkably hard fibrous cancer, occupying the mediastinum surrounding the bloodvessels; and 3d. Obstruction from a cancerous fungoid growth, which extended over the base of the heart, implicated the great vessels, and even penetrated the heart itself.

A plate is attached to this paper, representing the case first related.

V. *Report on Pyœmia, and some Allied Affections.* By Samuel Wilks, M. D.

The main object of this paper is to examine some of the facts connected with the post-mortem appearances after death from pyæmia; and for this purpose Dr. Wilks has placed together all the cases of fatal pyæmia which have occurred in Guy's Hospital during the last eighty years, and in which post-mortem examinations have been made. They are 173 in number, and a sufficiently full history of each one is given separately. These cases are divided into different series in accordance with the circumstances which gave rise to the disease, as the causes of pyæmia constitute the most practical point of interest.

Dr. Wilks only touches briefly on the pathology of pyæmia, but clearly states his adhesion to the modern theory. that the elements of pus or some allied matters are introduced into the blood, which then induce similar inflammatory products elsewhere. The channel of infection is probably to be found in some vein or small vessel that has taken up the morbid matter. The result of its introduction into the circulating fluid is to cause it to coagulate either in the large vessels or in the capillary system of the viscera. This coagulation of the blood is the first stage of the morbid condition produced in the viscera, and the last stage is suppuration. The local disease, however, found in the lungs and other parts after death, is not sufficient, in the majority of cases, to account for death through the instrumentality of the organs themselves, and recourse must be had to the blood-disease itself, and its effects on the system or nerves, to account for the event.

This communication of Dr. Wilks is by far the most important one in this volume of the "reports," and forms perhaps the most valuable contribution that exists, to our knowledge, of pyæmia, the most dreaded enemy the surgeon has to encounter. Its nature, however, is such as to defy anything like a brief analysis, and we must content ourselves, after the short account just given of Dr. Wilks's views as to its patholgy, with calling to it, as well as we are able, the attention of the profession.

VI. *On the Influence of Alkalies in Checking the Production of Artificial Diabetes, and in Leading to a Rapid Disappearance of Amyloid Substance from the Liver.* By F. W. PAVY, M. D.

VII. *On the Influence of an Acid in Producing a Diabetic State of the Urine.* By the same.

XVII. *Researches on the Influence of Various Articles of Food on the Elimination of Sugar in a Case of Diabetes, with Reports of other Cases Successfully Treated by Restriction to a purely Animal Diet.* By the same.

These three communications can be very advantageously considered together. Dr. Pavy, in a paper in the fourth volume of *Guy's Hospital Reports*, noticed in the number of this *Journal* for April, 1859, maintained, as a result of experiment, that in the liver a substance is formed, convertible with extreme facility into sugar, by a process allied to fermentation; that this substance seems to have the power to resist this transformation while located in the tissue of the living and healthy liver; but with the destruction of life this power of resistance is at an end, and the organ then becomes speedily charged with the saccharine principle. The fifth volume, noticed in this *Journal* for January, 1860, contained another communication from Dr. Pavy, in which he argued, from experiments, that the medulla oblongata through the sympathetic nerve gave to the liver this force or condition by which this chemical tendency to a saccharine metamorphosis is overcome. The communications to the present volume, as seen from their titles, continue this interesting and important subject, of the formation in the liver of amyloid substance,[1] and the influence of certain substances upon its production and its conversion into sugar.

The following is a summary of the results arrived at by Dr. Pavy, in consequence of his experimental researches as to the action of an alkali:—

The introduction of carbonate of soda into the circulation prevents the production of saccharine urine after lesions of the sympathetic otherwise occasioning it. When it is injected into the portal system during life, it causes a rapid disappearance of amyloid substance from the liver without any sign of the production of sugar. The amyloid substance, in disappearing under the action of the alkali, does not undergo transformation into sugar, nor is it destroyed by any direct chemical power possessed by the carbonated alkali; the facts seem to suggest that it is transformed by a process of the nature of catalysis. Though it cannot be said positively that the amyloid substance is directly transformed into fat, yet there is a close connection between its disappearance from the liver, the production of fat in that organ, and the condition of the bile.

It is well to add that the quantity of carbonate of soda, used by Dr. Pavy in his experiments, which, as usual, were performed upon dogs, was from fifty to two hundred grains, dissolved in from four to eight drachms of water. To produce its effect he found it necessary, when throwing it into the portal system, to inject it rapidly; or else to impede the escape of blood from the liver, by holding the muzzle of the animal so as to temporarily check its breathing: for in this way the carbonate of soda is delayed in the liver, and thus enabled to bring about the chemical alteration just noticed.

In the experiments made to determine the effect of depriving the blood of its natural alkalinity, Dr. Pavy introduced phosphoric acid into the duodenum or some other portion of the small intestine. The preparation used was the officinal dilute phosphoric acid of the London Pharmacopœia, the formula for which is given in the *United States Dispensatory*, and from ten to thirty drachms were

[1] The term *hepatine*, first given to this substance, is abandoned by Dr. Pavy, for the reason that it is found in the other parts of the body besides the liver.

injected. From these experiments it is evident that the presence of an acid in sufficient amount in the system so prevents the normal processes of life as to occasion a considerable production of sugar, which passing into the blood escapes by the urine. This must be considered to be caused by the effect of the acid upon the liver, as a consequence of which the chemical disposition of the amyloid substance to change into sugar is allowed to come into play.

In the third communication of Dr. Pavy to this volume, a minutely detailed history of a case of diabetes is given, in which the relation existing between the ingestion of different articles of food and the extent of elimination of sugar by the urine was carefully investigated. The patient being in the hospital, he could be strictly observed, and every regulation enforced; a laboratory was at hand with all the needful chemical agents and appliances, and a staff of active and inteligent students rendered their assistance in carrying on the investigations. From the 1st of February to the 21st of March, every four hours, the urine was examined, and its quantity, its specific gravity, with the quantity of sugar per ounce, and also the whole quantity, were noted. The case is first related at length, with the daily observations and comments; the results are then given, in tabular form, for greater facility of examination and comparison, and a diagram is added, so arranged that at a glance one may see the influence of the food, each day, upon the quantity of sugar in the urine. When the patient had the ordinary full diet of the house, the amount of sugar daily discharged in the urine was 10.500 grains; when he took only meat, beef-tea, and jelly without sugar, the quantity was 594 grains. At the same time that the quantity of sugar diminished the patient improved strikingly in appearance, health, and strength; he did not object to this kind of food, did not get tired of it, and said that he felt no longing after bread nor any other vegetable substance. He was allowed greens, however, as they were found by observation to produce no ill effects. He left the hospital plump and happy, saying that he never felt better in his life; he had no thirst, no dryness of the skin, and his appetite was easily satisfied.

The reports of several other cases, less minutely related, are subjoined in this communication. They were all treated by restriction to animal food, and in all the treatment proved in the highest degree successful in affording to the patient complete relief from the bodily symptoms of his complaint. The quantity of sugar in the urine was always greatly diminished, and in one case it totally disappeared.

On reviewing the results produced in these cases of diabetes, by the influence of food, Dr. Pavy says: "In the healthy person the starch and the sugar consumed as food are assimilated, and rendered subservient to the requirements of the economy. In the diabetic, there is an absence of this power of assimilation, so that whatever of such food is taken, on account of its not being properly elaborated, it filters through the system in obedience to the simple laws of physics. I believe, in thus passing through the system, the sugar in such quantities so alters the natural character of the blood as to unfit it for properly performing the healthy operations of life, and in this manner occasions the functional disturbances and structural changes that occur in diabetes. The obvious rational plan of treatment (until a means can be discovered for restoring to the body what is deficient, or correcting what is faulty) is restriction from food charged with unassimilable materials.

"The sugar that may still continue in the urine under abstinence from vegetable food results, I consider, from a non-assimilation of the amyloid substance manufactured by the liver out of the materials resulting from the disintegration of tissue and the retrograde metamorphosis of aliment absorbed into the circulation in excess. As long, however, as the sugar in the urine can be kept down to ten, twelve, or even fifteen hundred grains a day, my experience, as far as it has extended, is, that the patient does not in any way know of the existence of his complaint, otherwise than by the necessity of restricting himself to the regimen essential to attain this object. With only such an amount of sugar escaping, I believe that the blood remains adapted for the healthy performance of all the functional operations of life."

VIII. *Vomiting as a Sign of Disease.* By S. O. HABERSHON, M. D.

In this communication the author has placed together a number of cases of diseases of various kinds in which vomiting was one of the most prominent symptoms, in order to illustrate its value in diagnosis.

The intimate connection of the nerves of the sympathetic plexus with all the abdominal viscera and with the spinal nerves, and the extensive distribution of the pneumogastric which supplies in the abdomen, not only the stomach, but the duodenum, the liver, the pancreas, the kidney, and the supra-renal capsules, and in the chest, extends to the lungs, and communicates with the cardiac ganglia, explains how disturbance of the function of the stomach is frequently owing to disease in some other organ. Irritation in one set of branches of nerves is often seen to manifest itself in the disturbed function of another part supplied by the same nerve.

Dr. Habershon divides the causes of vomiting into those which originate in the stomach itself, and those which arise from its sympathetic connection with the brain, lungs, abdominal viscera, and general nervous system. The effect of these different causes is illustrated by a large number of highly interesting and instructive cases, and most appropriate general remarks are introduced to complete the subject. The communication is one well worthy of attentive study.

IX. *Remarks on Cauliflower Excrescence of the Os Uteri.* By J. BRAXTON HICKS, M. D.

This communication is a contribution of some importance to our knowledge of the pathology and treatment of the peculiar malignant disease of the os uteri, known as "cauliflower excrescence." By using the écraseur, Dr. Hicks has repeatedly removed the whole diseased mass, and submitted it immediately afterwards to microscopical examination. In the early stages of the disease, the villi are affected more particularly; and it extends, subsequently, to the subjacent tissue, and the other structures, as the mucous crypts and channels.

For removing the cervix uteri, in place of the chain in the écraseur, which can only act in a straight line with the shaft, Dr. Hicks finds it better to use a rope of annealed steel wire, which, if the hand cannot pass it round the tumour, is introduced by means of two tubes, like those of Gooch's double canula.

Two plates are attached to this communication, representing a removed tumour, with portions as seen under the microscope, and their anatomical elements.

X. *Case of Diabetic Cataract.* By JOHN F. FRANCE.

This communication gives the history of a case of diabetic cataract, in which the operation of extraction was performed. The escaped broken pieces of the lens, being tested for sugar, gave no indication of its presence. This examination, however, appears to have been made by a person not experienced in chemical analysis. The operation of extraction, as might, we think, be anticipated in such cases, proved a complete failure; the eye became inflamed and vision was irretrievably extinguished.

We cannot forbear, in this place, to call the attention of all those interested in the subject of diabetic cataract, to the three remarkable articles contributed by Dr. E. Lecorché, to the May, June, and July numbers of the *Archives Générales de Médecine.* They contain, so far as we are able to judge, all the information that can be acquired on this subject, at the present day. Among the conclusions to which Dr. Lecorché arrives, we may notice these: that diabetic cataract is not owing to saturation of the aqueous humour by sugar or an acid, but must be considered as one of the manifestations of the profound deterioration of the organism, and that it only appears at an advanced stage of diabetes, and affords a prognosis of certain and not distant death.

XI. *A case of severe Mutilation of the Forearm, with extensive loss of Bone.* Communicated by Mr. RICHARD EAGER, of Guilford. With some *Practical Observations on Injuries of the Forearm and Hand.* By EDWARD COCK.

The case of Mr. Eager, recorded in this communication, is one of the many on record, where, by judicious treatment and skilful surgical appliance, a limb has been preserved which at first sight, from the severity and complication of

the injury, might reasonably have been consigned to the amputating knife of the surgeon. The accompanying observations of Mr. Cock upon the circumstances that should guide the opinion of the surgeon, when called upon to decide on the retention or removal of a part of the body, are eminently judicious.

A plate represents portions of the bones of the forearm which were removed when the arm was first dressed. That removed from the radius measured $3\frac{7}{10}$ inches in length; the portion of the ulna $1\frac{3}{10}$ inches.

XII. *Description of a Case of Intra-parietal Hernia, with references to Cases which were probably of a similar kind.* By JOHN BIRKETT.

The case related in this communication is not unique, yet it offered facilities for a far more accurate examination than is generally made, and on this account its study is particularly interesting. The histories of a number of cases that resemble the one in question are also related, so that the paper forms quite an important contribution to the science of abdominal hernia. The practical conclusions we may draw from it are these: When called upon to operate in a case in which all the symptoms of strangulated hernia exist, after the contents of a hernial sac are supposed to have been reduced into the peritoneal cavity, the surgeon must examine, first, the upper part of the scrotum and the external abdominal ring for any portion of the hernial sac. Not meeting with it there, the inguinal canal must be opened by cutting the aponeurosis of the external abdominal oblique muscle from near the upper margin of the ring outwards and upwards towards the crest of the ilium. The hernial sac and its contents may be encountered here, lodged between the anterior abdominal walls, or running backwards into the iliac fossa. Should this not be the case, the spermatic cord must be followed through the internal abdominal ring, and there between the peritoneum and the internal abdominal fascia the hernial tumour is discovered. The surgeon then opens the sac, finds the intestine, and is surprised to find with what facility he is enabled to replace it in what he believes to be the peritoneal cavity. But this very facility should induce him to seek further, for the case is then probably one where the hernia has escaped through a laceration in the neck of the hernial sac. He should next pass his index finger along the upper surface of the intestine and the mesentery, and it will reach the orifice of the hernial sac, which firmly constricts the bowel. This being dilated or incised, the hernia can be returned into the peritoneal cavity.[1]

A plate containing two figures is attached to this communication, for the purpose of illustrating the case of intra-parietal hernia therein described.

XIII. *Case of Compound Fracture and Dislocation of the Astragalus.* By THOMAS BRYANT.

This communication contains simply the report of a case of compound fracture and dislocation of the astragalus, where the patient recovered without amputation, and with the ability of taking free exercise without any inconvenience. It is accompanied by a plate representing some nine separate portions of the astragalus removed after the accident, and in subsequent operations.

XIV. *Description of some New Wax Models, illustrating a Peculiar Atrophy of the Skin, &c.* By THE CURATOR.

According to his usual custom, the Curator of the Museum gives, in this communication, a description of the more remarkable models of cutaneous diseases, which have been added during the year. They include a peculiar *linear atrophy of the skin*, the *eruption of glanders*, the *purpuric stage of smallpox*, *syphilitic keloid*, a peculiar inflammation of the skin which is styled *dermatitis*, and hands affected by *oxalic acid*.

Linear atrophy of the skin is a condition resembling the *lineæ gravidarum*, and derives a peculiar interest from the fact that it may arise from a morbid process, and without any previous stretching of the surface. In the cases from which the models were taken, such marks were found on the limbs both of a

[1] See the number of the Journal for April, 1860, for an analysis of a valuable communication of Mr. Birkett to the "Medico-Chirurgical Transactions" (vol. xlii.), on the subject of *réduction en bloc*, in strangulated oblique inguinal hernia.

young man and a young woman, without there having been any previous distension of the integument. This is a matter, therefore, not only of scientific interest, but also of practical importance: for there is no reason why such marks should not arise from a similar morbid process on the abdomen of an unimpregnated woman; and if so, their diagnostic value as a sure sign of pregnancy or previous distension is of far less importance than is generally supposed.

A plate attached to this communication shows the leg of the young man affected by the linear atrophy of the skin, displayed in the transverse markings running across the lower anterior portion of the thigh.

XV. *On Paralysis of the Lower Extremities, consequent upon Disease of the Bladder and Kidneys* (*Urinary Paraplegia*). By WILLIAM GULL, M. D.

It is a well-established fact in medicine, that paralysis of the lower extremities is occasionally caused by diseases of the urinary organs; but medical authorities are not agreed upon the state of the spinal cord in these cases, nor upon the character of the morbid processes by which the cord is affected.

In this communication Dr. Gull argues very forcibly against the opinion, which is the one generally held, that this peculiar form of paralysis depends upon mere reflex irritation. At no age is the nervous system more susceptible than in childhood, and yet children are not commonly the subjects of urinary paraplegia. In women, again, calculus, cystitis, and pyelitis are not unfrequent, and nevertheless urinary paraplegia in them is extremely rare. The cause of their immunity, he says, is not to be found in their having a less susceptible nervous system, which the reflex theory would seem to require, but in the less complicated anatomical conditions of their urinary organs, and consequently a less need of mechanical interference, and, therefore, a less liability to the extension of inflammation to the pelvic structures and the cord. From facts like these, Dr. Gull concludes that urinary paraplegia arises from an altered nutrition of the cord, due to extension of the disease through continuous structures to the cord itself. He states, in addition, that as yet no case of the disease has been fully examined, post-mortem, without finding degeneration of a part of the cord.

XVI. *Contributions to the Practical Surgery of New Growths or Tumours.* Series IV.—CYSTS (continued). By JOHN BIRKETT.

A contribution of Mr. Birkett to the last volume of the "Reports," contained a series of cases illustrating the development of cysts of various kinds in the connective tissue of the body and their treatment. In this paper he proposes, he says, to relate a series of cases illustrating the formation of cysts in some of the organs of the body and their treatment. The cases to be found in it are four of cysts in the thyroid gland, two of cysts in the parotid, and six of cysts in the mammary gland. We feel bound to say, in self-justification, that a diligent search has not enabled us to find one fact or one remark worthy of being republished, in the whole of this paper.

In taking leave of this volume of the "Reports," while acknowledging its value, on the whole, as a contribution to the art and science of medicine, we must venture to express the regret that more time is not habitually expended by several of the writers in elaborating their communications. W. F. A.

ART. XIX.—*Annuaire de Thérapeutique, de Matière Médicale, de Pharmacie et de Toxicologie, pour* 1861. Par A. BOUCHARDAT. *Supplement à l'Annuaire de Thérapeutique, &c., pour* 1861. Paris.

THE name of M. Bouchardat stands high on the list of those zealous contributors to medical science, whose scientific knowledge and correct judgment, joined to patient industry, enable them to confer favours upon their professional brethren, and to aid the advance of investigation by recording its progress. It is well known to most of our readers that for each successive year since 1841, he has presented to the public a resumé of the important facts and improvements

contributed to the department of the Materia Medica and its kindred branches. In addition, from time to time, he has contributed, in the form of a separate essay, a summary of the actual condition of our knowledge upon particular subjects connected with his especial line of research. Devoted to chemical investigation in its application to pathology and therapeutics, he has presented in the manner stated the results of his studies through the long period of twenty years, and we may now refer to the last number of the *Annuaire and Supplement* as proof that there is no diminution of zeal or interest in his researches. It is our intention to glean from the publication such matter as we believe will be interesting to the medical men of this country.

Under the head of Narcotics M. Bouchardat remarks that, thanks to the persevering efforts of M. Aubergier, opium of the standard of 10 per cent. of morphia (opium titre a dix pour cent. de morphine) is a current commercial product which each pharmaceutist can procure if he desires, and that from this results a great advantage, which is, that in all good shops the preparations containing opium present a uniformity on which physicians can rely in prescribing them. In the *Annuaire* for 1860 we were informed that M. Aubergier, of the Faculty of Sciences of Clermont, had been engaged in the endeavour to secure the possession of opium containing 10 per cent. of morphia, with what success we learn from the following statement of that gentleman: "Since I have had the honour of submitting to the Academy an account of my efforts regarding the means of regulating the richness in morphia of opium employed in medicine, I have met with numerous difficulties. These difficulties have been so often presented as insurmountable, in the estimation of the Academy itself, that the time consumed by me in overcoming them ought not to be a matter of astonishment. The crisis with regard to food, which has existed for three years, by rendering the exigencies greater on the part of agriculturists, has increased the difficulty. The kindness with which the Academy has received my communications has been a powerful encouragement to perseverance, and I have regarded it a duty to profit by the abundance which has commenced, to develop the production of indigenous opium. The suspension of effort in this respect, on account of the deficiency of the cereal crops, has induced me to study under a new aspect the solution of the problem proposed, the regulation of the standard of opium employed in medicine. I have studied the production of opium in the East, and I have determined that I could easily procure oriental opium of the strength of 10 per cent. in morphia, and that in the case of an insufficiency of the indigenous culture it would be easy for me to continue the supply of opium of this standard by obtaining it directly from the East, before it has passed through the hands of falsifiers." "After having acquired this information, and taken measures founded upon it, strengthened, moreover, by an experience which goes back as far as 1843, I will undertake to place in commerce a standard opium of 10 per cent., whose composition will always be identical. I have the honour of presenting with this letter a specimen of this opium, with the wish that it should be exhibited to the Academy. The tinfoil leaf which I use as an envelop has the advantage of better preserving the opium than the poppy leaf or the seeds of the rumex usually employed."

Of late, it appears that opium as an article of culture has again attracted attention in France, several species of poppy having been experimented with. According to the report of M. Roux, it appears that the juice derived from these plants has a greater amount of morphia than is found in the article of commerce. It is certainly desirable that this subject should receive the attention in this country which it appears to have attracted in France, and there is no reason why, as with respect to scammony and other articles of the Materia Medica, the purest kinds should not be demanded by the profession.

On the Meconate of Morphia in Subcutaneous Injections in Puerperal Eclampsia.—From the *Bulletin Thérapeutique* is derived an interesting observation by M. Scanzoni, who has employed with advantage the method proposed by MM. Woodd and Behier. This author states that the numerous experiments that I have made upon this method, have convinced me that if the effect be not always persistent, if, for example, neuralgias are not always cured, there is produced always and in a short time, often a few minutes, such effects as do not

permit a doubt as to the action of opium on the brain. A single injection of the solution, containing 12 milligrammes of the meconate of morphia (about ¼ gr. Troy), habitually determined heaviness and dulness and disturbance of the functions of circulation and respiration, and if the dose was stronger somnolency was induced. The report of advantage derived from this mode of treatment in various diseases induced him to put it in practice in puerperal eclampsia, and with the most satisfactory result. After three injections made with the meconate of morphia, there were but two attacks in nine hours, while previously there had been three in an hour and three-quarters. For the meconate, the muriate may be substituted. In commenting upon the employment of subcutaneous injections, it may be remarked that an inconvenience we have met with is the occurrence of abscesses in the portion of the body injected. A case of troublesome persistent discharge of the kind has fallen under our notice, adding much to the sufferings of the patient.

Another case of the employment of subcutaneous injection is reported—it is that of the sulphate of strychnia for prolapsus of the rectum in a female four years of age. M. Foucher introduced the canula of a Pravaz syringe in the direction of the sphincter, on the side of the anus, and injected ten drops of a solution containing three grains of the sulphate of strychnia to six drachms of distilled water. During the course of the day, the child manifested nothing unusual, and in three movements the mucous membrane prolapsed but once. The next day there was no prolapsus, and upon the day after it occurred but once. Twenty-four hours after the last prolapsus, M. Foucher injected anew fourteen drops of the solution, and from that time, during the period of six weeks that he remained in charge, there was no recurrence of the prolapsus. Two months after the injections, the child was taken to the medical ward, labouring under varicella with high febrile action. During four days that the fever lasted, the rectal mucous membrane protruded at each movement, but after the attack of varicella disappeared, the accident did not again occur, although no treatment was instituted. The cure was complete and persistent.

Strychnia has been employed by M. Tillier in three cases of paralysis from diphtheria. The treatment consisted of subcarbonate of iron fifteen grains, and strychnia to the extent of one-thirteenth of a grain, daily. At the end of fifteen days there was marked amelioration, and radical cure at the end of three weeks in the first and second cases, and in the third case in less time.

The French physicians are frequently struck with the heroic method of employing medicines by the English. Thus, allusion is made to this practice by M. Bouchardat, who quotes a case of retention of urine, reported in the *Lancet* of April 30th, where, in consequence of the inability of introducing the catheter, the patient was given seven grains of morphia with seven drachms of bicarbonate of soda, administered in divided doses every half hour, when the bladder emptied itself spontaneously at the end of twenty-four hours. He remarks that these large doses of morphia would cause legitimate apprehension in French physicians.

M. Demarquay has published in the fifty-ninth volume of the *Bulletin de Thérapeutique* an interesting note upon the employment of continued fractional doses of opium in the treatment of strangulated hernia. Six years ago, says M. Demarquay, I was called to take the place of M. Monod, and I saw this skilful surgeon treat his cases of strangulated hernia differently from what I had done, that is to say, instead of purging them, he administered a grain and a half of opium in ten pills, one pill every hour for twenty-four or forty-eight hours, and with the best results. If in this time the natural evacuation did not take place, a saline purgative was given, which generally succeeded well. It is a common practice with surgeons in this country to give a full dose of opium or its preparations, and we extract this case rather as evidence of feeble practice on the part of the French surgeons. The influence of opium in all intestinal inflammations is so decided, that it is wonderful that this is not understood by the French. We have been surprised in perusing the treatise of Baudelocque on puerperal peritonitis, to find that opium is not alluded to as one of the remedies.

With regard to Lactucarium, M. Bouchardat remarks, that the numerous

communications made this year in the journals upon this substance are evidence of the importance it has assumed since the beautiful researches of M. Aubergier. Many preparations, of which this medicine is the base, are found in the new English formularies, but none comparable to those presented by the learned Frenchman. Let us commence by presenting a summary of an article of M. L. Malenfant, published in the *Journal of Pharmacy*. He presents in this article an account of the preparation of the Thridice. "I collect," says he, "my lettuce when ready to flower, and at a dry period. I separate the leaves and place them aside to be operated on later. I now cut off the stems as far down as the first ramifications, rejecting the thick lower portion; they are then cut in pieces and bruised in a mortar, afterwards subjected to pressure and the juice collected. The juice is rapidly boiled to prevent fermentation, and the scum of chlorophylle, albumen. caoutchouc, &c., removed. Four or five minutes of ebullition are sufficient. The cold juice indicates 5° of the saccharometer. It possesses a slight acid reaction, owing to lactic acid. I then concentrate it in a water-bath, using an alembic, measuring or weighing the fluid, and when two-thirds of the water has been distilled off I decant the semi-syrupy liquid into a stone-ware conical vessel, leaving it stand for two hours. The cold liquid is of the gravity 16°—18°. After twelve hours of repose, I decant the fluid portion with care, filter it through paper and evaporate rapidly in a water-bath to the consistence of a soft extract, which is to be preserved in closed vessels. M. Malenfant states that the thridice has agreeable and sedative properties. This extract has the same relation to lactucarium as the juice of poppy heads and of the stems has to opium. During this year two formulæ for the syrup of lactucarium have been published, one directing 3 centigr. of codeia (about ½ gr.) and the same amount of lactucarium to 100 grammes of syrup (about 3 oz.). As remarked by M. Bouchardat, the addition of codeia is not happy, as this base operates similarly to morphia. In fact, the syrup thus prepared cannot be considered as bona fide syrup of lactucarium. The other formula directs as an addition citric acid. The formula of M. Aubergier, adopted by the Academy of Medicine, and published in the *Annuaire* of 1834, is in all respects regarded as the best.

With respect to Atropia, it is observed that this substance is one of the most important therapeutical triumphs of our day, for it has taken the place of preparations derived from the virulent solaneæ, so apt to be variable and uncertain. The method of subcutaneous injection popularized by M. Behier, has opened a new era of application, still we are ignorant of the easiest way of preparing atropia. The following hint is important. When crude atropia is dissolved in acidulated water and neutralized by an alkaline carbonate, the matter which in the first place is deposited is a resinous substance, but when the precipitate commences to become pulverulent, it is atropia. This is alkaline, and has been called *belladonine*.

At this time, when the employment of anæsthetic agents has become universal, the following reflections may prove interesting. "Every month the periodical press records cases of death produced by the use of anæsthetics, and among so many examples it is not fair to say that this result is owing to want of caution on the part of operators. The cause of these terrible accidents has been sought for with much care, and most frequently the conclusion has been arrived at that death occurred from syncope, but if anything ought to surprise us, it is that death does not occur more frequently when anæsthetics are employed in sufficient quantity to produce complete anæsthesia. It is understood, without difficulty, that the action of a substance which suddenly abolishes the functions of animal life, which determines the insensibility of death, can extend its impression to the functions indispensable to the maintenance of life. Sleep from anæsthesia first occurring, respiration and the pulsations of the heart may be interrupted, hence syncope, and if this be prolonged we have death. If this is the course of events, one can comprehend that it is difficult to foresee the impressionability of any given individual, as this involves a personal equation which experience alone can solve. This impressionability must vary in each individual, according to the conditions of strength, or weakness, or the tendency to disease, &c. Shall we then blame the employment of

these wonderful agents, which not only suppress pain, the great evil of humanity, but increase the successful chances of a great number of operations? By no means, but it is a duty to arouse the solicitude of all who employ them. If in the great hospitals of Paris the accidents are so rare that they can be counted, it is to be attributed to the fact that our colleagues do not push anæsthesia to its utmost limits, that they watch continually its employment, and do not have recourse to it, when any contraindication presents." As a means of resuscitation and of the prevention of fatal results, M. Bouchardat recommends the preparation of oxygen gas and its being kept at hand in vessels fitted for exhibition easily and instantaneously. He states that he has always considered the inhalation of oxygen the best means of combating asphyxia from want of atmospheric air, from the presence of various gases, and from chloroform and ether. M. Ozanam states, that in the different experiments he has made, he has constantly witnessed the animal revive more promptly with oxygen than with atmospheric air, and the difference of time is more than one-half. The results have been the same when experimenting with either ether or chloroform. Many animals were put under the influence of chloroform until the pulsations of the heart were imperceptible, respiration very much weakened and death imminent, and yet scarcely were they submitted to the restorative action of oxygen, than respiration became strong and regular, and the recovery was most rapid. Finally, to render this clear and decided, Mr. O. instituted an experiment in which the animal respired at the same time a current of vapour of ether and one of pure oxygen. He had to expend nearly fifteen grammes of ether; the animal inhaled for twelve minutes before sleeping, and at the end of this time the sleep was so light that it awakened spontaneously at the end of a minute and a half without the oxygen. A second experiment was made with a double current of oxygen and chloroform, more than fifteen grammes of which fluid were employed, and yet at the end of eight minutes the animal was little enfeebled, sleep had not occurred, and in a few moments after the inhalation was stopped, the natural state was resumed. Thus, when the anæsthetic vapour is respired conjointly with oxygen, three or four times as long a period elapses before sleep is produced as when atmospheric air is respired with it. These results confirm those of M. Duroy.

The results of the discussion on the relative merits of ether and chloroform, by the Society of Medicine of Lyons, has already been presented in this journal. They were in favour of ether; but the Society did not pass the resolution, that "the *presumption* of *imprudence*" should be attached, in the estimation of the Society, to the exhibition of chloroform in future, where it could be replaced by ether. M. Bouchardat, in his commentary upon these conclusions, leans to the opinion that chloroform should not be summarily abandoned, and states that, from the time complete anæsthesia is obtained, theoretically at least, the same danger presents. If ether appears less redoubtable, it is because there are not obtained by it effects as rapid or as complete.

Under the head of general stimulants it is stated, on the authority of Wyman, that *fusel oil* excites nutrition, so that patients who use it grow fat, as if using the cod-liver oil. He remarks that, in many subjects, this article appears to have a direct influence over cough, analogous to that of opiates; that it moderates it and diminishes the amount of sputa. Sometimes it produces nausea, when the dose must be diminished or the medicine intermitted. There is another class of subjects in whom fusel oil produces wonderful effects; these are miserable, feeble, emaciated children, who are always complaining. He has seen such children completely altered in aspect at the end of a week, and recover in a month their flesh and health, even in cases where there was reason to suspect the existence of pulmonary or abdominal affection. It is not always that this amelioration is so decided; but such success has been obtained by fusel oil, that he does not hesitate to declare that it is one of his favourite remedies. It is prescribed in the dose of half to a full drop for an infant of six months, and five or six drops for an adult. It is given to children in syrup, and to adults in water or whiskey and water.

There are some remarks of M. Briau upon the subject of benzoate of soda in gout, under the head of diuretics. Having been impressed by the fact that some of the English chemists had announced that benzoic acid decomposed uric

acid, by changing it into very soluble hippuric acid, he, in 1842, first administered benzoic acid in gout; this disease being accompanied by the excessive generation of uric acid. But it was not in general well borne by the stomach, and could not be continued for any length of time, besides which it irritates the throat. It was, therefore, laid aside, and the crystallized benzoate of soda substituted for it. This salt, which is soluble, is well supported by the stomach, even in large doses, and sometimes it may cause light but little durable irritation in the gullet. Generally, it leads to an increase in the quantity of urine.

According to his views, a correct treatment of gout should have the effect of increasing moderately and persistently the principal secretions of the economy. To obtain this result an excitant of transpiration should be joined to the benzoate of soda, and he employs muriate of ammonia. In uniting these two salts he obtains what he desires, viz: augmentation of urinary secretion and insensible transpiration. As gouty patients are liable to constipation, he adds to the mixture some powdered senna, which fails not to produce one or two stools a day. The following is the receipt: Take of benzoate of soda 3 parts (25½ grs.); muriate of ammonia 2 parts (17 grs.); powder of senna 2 parts (17 grs.). Mix the substances thoroughly, and keep in a close vessel. One-fourth the mixture is to be given night and morning, in water, increasing the quantity until on the fourth day one-half may be taken. The treatment is to be continued for eighty or one hundred days. During the treatment acid food and drinks are to be avoided, and exercise is to be enjoined.

The most favourable time for instituting this treatment is the intervals of the paroxysms.

The question as to the value of *Sulphate* of *Cinchonia* has again occupied the public mind, and we have here presented to us an interesting report made to the Academy of Medicine upon a memoir of Dr. E. Moutard-Martin, Physician of the Hospital Beaujon, entitled "Upon the Value of Sulphate of Cinchonia in the Treatment of Intermittent Fevers."

M. Bouchardat remarks that, in spite of the beautiful investigations which have been presented upon cinchonia, there are many points still to be elucidated. Delicate controversial questions, difficult of solution, present themselves whenever the subject is approached. Does then cinchonia act as quinia in combating intermittent fever? Ought it to be considered as inferior? The marked and remarkable physiological properties of the salts of quinia are well known; are the properties of the salts of cinchonia different? and if so, what are they? To these questions a response may be given by attentive observation, and to this the author has devoted himself, and possessing ample material, has produced the memoir above mentioned.

The points presented for consideration, are: 1. The necessity of determining the previous influence of hygienic measures when a febrifuge agent is experimented with. 2. The precautions indispensable for determining the value of the experiment. 3. The results obtained with the sulphate of cinchonia. 4. The physiological effects of this salt. 5. Can the sulphate of cinchonia replace the sulphate of quinia? 6. Will there be any advantage in introducing the sulphate of cinchonia into common use in therapeutics.

In answer to the first inquiry, M. Martin remarks that, let a patient who has been exposed to paludal effluvia, and has contracted an intermittent fever of any type, quit the place of infection where he has lived; let him change the air and mode of life, &c., and the paroxysms will disappear, in the greatest number of cases, not slowly, but rapidly, as under the influence of energetic treatment. These are the conditions in which the patients are placed upon whom have been made experiments with antiperiodic medicines, as all of them nearly have been made in hospitals. The following is his experience: A patient presents himself suffering from intermittent fever, and presenting all the characteristics of miasmatic intoxication. There is no doubt with respect to such a patient; and yet, from his entrance into the hospital, he has no paroxysm of fever, and he leaves, at the end of a few days, having regained his colour, and without splenic tumefaction, without having undergone any other treatment than repose and a good regimen. At other times the fever does not so suddenly disappear; but, on the day after admission, the paroxysm is weaker than before; the next day only

traces are exhibited, and finally the patient is cured. These cases of rapid cure from change of habits and regimen are numerous.

It is highly important, before administering a febrifuge, whose action is imperfectly known, to observe the patient for several consecutive days, and to study with care the return of the paroxysm—whether it anticipates or is retarded—if the intensity is the same—if the different stages are modified; and it is only after having seen at least three or four paroxysms perfectly alike, that we can administer the febrifuge under experiment, so as to draw any conclusions from its action. Every one knows that a few observations in which these precautions have been taken are more valuable than a greater number in which they have not been attended to. A distinguished physician who has practised in Africa, M. Laveran, published, in 1856, in the *Gazette Médicale*, a memoir proving the same thing, viz.: that patients having contracted intermittent fever were cured by undergoing no treatment except removal from the place of infection to the nearest hospital. In 88 cases the average proportion of paroxysms of fever, after entrance, were to the extent of 2½ without treatment, according to M. Leveran. In order to guaranty, as far as possible, from the chances of error, upon which M. Martin has insisted, he has always waited until three paroxysms have occurred, before administering the sulphate of cinchonia; and further, to ascertain if nothing appeared either in intensity or duration to lead him to believe there would be a spontaneous solution. In a single case he alone departed from this rule.

Whenever gastro-intestinal complications existed they were treated by an emeto-cathartic or a purgative, or if diarrhœa existed it was combated before giving the sulphate of cinchonia, the author being well assured that in spite of the emetic or purgative the fever would follow the regular course without undergoing modification. All the patients were placed upon a nourishing and sustaining regimen. It may be remarked that the purity of the medicine should always be tested to be assured that it does not contain sulphate of quinia.

In order to determine the physiological effects, and to show how large doses could be borne, M. Martin took 40 centigrammes (6 grs.) of sulphate of cinchonia in the morning fasting; at the end of half an hour he experienced feebleness and warmth in the stomach which continued three-quarters of an hour; when the dose was increased to 70 centigrammes (10¾ grs.), in a quarter of an hour after ingestion, he was attacked with violent pain in the head, especially over the eyes, constriction of the temples, dull pain in the stomach and desire to vomit (which was removed by a draught of cold water), and feebleness, which caused him to remain seated for twenty minutes. The headache persisted for nearly two hours. These experiments were sufficient, and were confirmative of those presented in the Supplement to the *Annuaire* for 1856. The quantity which might be given was ascertained to be 1 gramme to 1½ gramme, 15½ to 23¼ grs., by arriving gradually at this dose, but never more.

Of 51 patients received into his wards, 23 alone possessed the conditions desirable for the administration of sulphate of cinchonia. Of these, 12 had quotidian, and six were cured, 2 were not benefited, and 4 were not sufficiently important to be taken into account, the paroxysms being on the decrease when the medicine was administered. Again, of 10 of these 23 cases, 6 were cured more or less speedily, 2 were only modified, and in 2 the action of the medicine was not developed. Lastly, 1 quartan fever was cured. Now, in revising and rejecting the 4 cases not regarded by the author of sufficient importance, there will remain 19 cases, of which 13 have been completely cured, 2 have been improved, and 4 have been unsuccessfully treated. It is from the study of these 19 cases that the author draws his conclusions.

From the comparison of all the facts recorded in the physiological and therapeutical history of cinchonia given in the supplement of 1856, M. Bouchardat concluded, that to combat non-malignant intermittent fevers, the sulphate of cinchonia was in equal doses on a par with the sulphate of quinia; he observed, nevertheless, that in equal doses the last-named salt more rapidly suppressed the paroxysm; but the first was, at least, as certain when the element of time was disposed of, and the pernicious type was not feared. This is not the opinion of our author, who thinks that whenever the sulphate of cinchonia acts suffi-

ciently, its effects are similar to those of the sulphate of quinia. It prevents the paroxysm, but at other times its action is not sufficient to accomplish this, and if the dose be increased accidents occur which do not permit its being pushed, and then the medicine imperfectly impresses each paroxysm, still diminishing it, so that the cure is accomplished little by little, as when sulphate of quinia is administered in insufficient doses. When it acts, according to M. Martin, the sulphate of cinchonia appears to make the same impression as the sulphate of quinia as regards nature, and to be different only in intensity. This identity of nature and difference in power accords with the estimate of M. Briquet.

If the want of success of the sulphate of cinchonia is more marked than that of the sulphate of quinia it is because its physiological action being more rapid does not permit its exhibition in sufficient doses. The author cites, in confirmation of the foregoing opinion, cases in which unpleasant symptoms have prevented the sufficient increase of the dose. He is satisfied that in the 4 cases where given ineffectually, the sulphate of quinia might have been pushed further than it was prudent to push the sulphate of cinchonia.

The study of the physiological action of sulphate of cinchonia presents as much interest as difficulty. Does cinchonia act upon the organism, and especially upon the brain, as quinia, but with one-third less power, as stated by Briquet? or, on the contrary, is this action more energetic and different as appears from the experiments and observations recorded in the supplement to the *Annuaire* of 1856? Here is the *résumé* of M. Martin.

Of 25 patients who took the sulphate of cinchonia, 12 suffered discomfort attributable to the remedy. Among the disagreeable symptoms there was a constant one even in individuals who took the least amount, and that was pain in the head occupying the frontal region and the temples. The patients laboured under an almost intolerable constriction of the anterior portion of the head. At the same time there was experienced a most painful weakness, yet variable in degree. Sometimes there was mere weakness, at other times the debility continued up to the commencement of the paroxysm accompanied with syncope, faintness, and paleness of the face. Some patients experienced sharp pain in the stomach, sometimes nausea and vomiting; but this was rare, only two exhibiting such symptoms in 23 cases. Once there occurred vertigo and pain in the limbs. These different phenomena may all occur in the same subject or only some of them, and hence the separation into constant and variable phenomena.

The physiological effects commenced, generally, in a short time after the ingestion of the substance, varying from the fourth to half an hour. In duration the difference is from half to three-quarters of an hour.

The best remedy against the occurrences stated, according to M. Martin, is the ingestion of cold water, when the pain in the stomach disappears and the other symptoms also, but this is only when the inconveniences are slight.

All the facts related by the author accord with those announced in 1856, and tend to induce the idea that cinchonia has a different physiological action under several points of view from that of quinia, and possesses a more energetic toxicological influence. The curious fact presenting itself in this connection is that two bases should exist, so near alike in their effects upon the animal economy, but one of them having more poisonous energy and less curative properties.

There is one fact upon which Briquet, Martin, and Bouchardat agree, and that is that sulphate of cinchonia is not as certain as sulphate of quinia in the cure of intermittent fever. If success with the first is less, according to the author, it is because the dose cannot be pushed sufficiently far without inconveniencing the patient, but M. Bouchardat thinks it is because cinchonia has a different mode of action.

Between quinia and cinchonia there are evidently differences in physiological action. Have they then a difference in therapeutic action of intensity only? This will be known better when cinchonia has taken rank with its congener, and is administered under conditions as varied. It may be that it has less power than quinia in intermittent fevers, but is superior in other diseases. In articular rheumatism it is less efficacious than quinia.

Can sulphate of cinchonia replace the sulphate of quinia in the treatment of

intermittent fever? To this question the author, without hesitation, answers, no. The following are his conclusions:—

1. The sulphate of cinchonia administered in intermittent fever has incontestable, but variable power.

2. Sometimes its action is rapid, and it prevents the paroxysm like the sulphate of quinia, at other times it is slow, whatever be the dose administered, and the disease exhausts itself little by little.

3. The dose of sulphate of cinchonia should always be, at least, one-third larger than the sulphate of quinia.

4. In order to obtain a curative action from sulphate of cinchonia it is necessary to employ it, in doses varying according to the individuals, from ½ to 1 gramme (8 to 16 grs.).

5. In this dose it determines often some physiological effects beyond which it would not be prudent to push it.

6. The therapeutic action of sulphate of cinchonia is not in proportion to its physiological action, for it sometimes cures without the patient having felt its action, while in other cases the physiological action is energetic, and its therapeutic action is wanting.

7. The sulphate of cinchonia cannot replace the sulphate of quinia in the treatment of somewhat grave intermittent fevers.

8. The sulphate of cinchonia may become an important adjuvant to the sulphate of quinia, in completing the cure commenced by this salt.

M. Bouchardat concludes his resumé of the memoir by stating that the discussion in the Academy which followed the reading the report of approbation of M. Martin's researches, did not alter his opinion. He does not see that the base cinchonia is the diminutive of quinia, and thinks that in equal dose cinchonia may be more hurtful than quinia, but that the latter will better suspend the paroxysms of intermittent.

He proposes a union of these two bases as practically useful, and hence the red or impure quinia should be preferred.

We have extended our notice upon this subject further, perhaps, than compatible with our limits, but its interest has led us to present the most recent investigations which show the still unsettled state of medical opinion; still further researches and reports are desirable.

Having culled from the work the portions which have appeared most important, we shall close our notice of the *Annuaire* itself by stating that among its concluding chapters are those upon "the principal dynamical modes of action of medicines," from the *Principles*, &c., of Dr. Delioux, of Toulon, in which the several modes of impressing the economy are discussed in what appears to be a philosophical way; and upon the "Influence of the Climate of Algeria upon Affections of the Chest."

Let us now turn to the *Supplement*, and the essay to which we shall give most attention is the commencing one on the "*Etiology and Prophylaxis of Pulmonary Tuberculization.*"

M. Bouchardat commences by stating, that it is not without great distrust that he approaches a subject so difficult as the etiology of pulmonary tuberculization, when he has seen men who have devoted their lives to its consideration hesitating with regard to it.

M Louis has remarked that the study of the causes is the most important point in the history of phthisis, and unfortunately the least thoroughly studied so far; and M. Grisolle has added, that in spite of the labour and laudable efforts of our contemporaries, the greatest number of questions are yet to be solved, for science possesses on this subject fewer rigorously observed facts than of unproved assertions. In the study thus beset with difficulties, the design of M. Bouchardat is to refer all the causes of tuberculization, admitted by sound observation, to a single physiological cause, proceeding in the following order. 1st, to ascertain the physiological law of the *genesis* of pulmonary tuberculization; 2dly, to attentively examine all the causes admitted by observation and to refer them to this law; and 3dly, to set forth the prophylactic rules emanating from it, and in accomplishing these he proposes to pursue the course laid down by Condillac, to proceed from the known to the unknown, from the simple to the complex.

It has been observed by Prout and by Rayer, and confirmed by the researches of M. Bouchardat, that glycosuric patients are affected by consumption; indeed, in nineteen cases of the affection all were observed to have tubercular deposit in the lungs. The existence of tubercular deposit may not be observed during life, for the following reasons: the patients die during the first period of deposition, and the symptoms peculiar to the presence of tubercles are overlooked, while those of the second stage do not arise. In M. B.'s experience, in which he is supported by authority, no case of glycosuria was preceded by tubercular consumption, the glycosuria always preceded the tuberculization. The complication did not occur at the commencement of the affection, but after a year or more had elapsed. Two indispensable conditions exist for this fatal result; he expresses these conditions by two words: *quantity* and *continuity*, and to formularize the cause, it may be stated "that tubercles do not appear until the resources of calorification are well exhausted by glycosuria, and in consequence of this exhaustion, the functions of the lungs and the whole of the calorifacient apparatus are notably lessened." If for such aliments as sugar and fecula—which in the living organism are so easily converted into glucose—there are substituted either in whole or in part aliments of calorification, as the fats or alcohol, then the sugar in the urine is lessened or disappears, and if pulmonary tubercles do not exist, they are not developed except under other causes. From numerous observations of patients who had laboured under glycosuria in different climates M. B. has noticed that when nutrition was sufficient and the quantity of glucose eliminated did not exceed in the 24 hours 100 grammes (3 oz. 2 dr.), tubercles did not develop themselves in the lungs. For a speedy result, as above stated, a large elimination must take place.

But tuberculization occurs when the elimination of glucose has continued sufficiently long, and it is very evident that the most important circumstance in the health of a glycosuric patient is the persistent elimination of glucose which, under certain conditions may amount to a kilogramme daily (above 2 lbs. Troy). This formation and elimination is effected in consequence of the non-utilization of the principal mass of aliment and of the reserves of the system. The office of the principle eliminated is evident, in the physiological state, to provide for the wants of calorification. Hence a glycosuric patient is in fact in such position that he eliminates without using or appropriating a considerable quantity of the principal element of calorification, and if this is continued for a long time tubercles always appear in the lungs. Let us see how this is borne out in the case of domestic animals.

Experiments have been made on a large scale by dairymen in the neighbourhood of Paris, before the introduction of railroads, and the following facts have been elicited. An intelligent agent each year was engaged in selecting, on the principles of Guenon, the best Flemish cows, and as the milk was then more valuable in Paris than at present when a greater radius of supply exists, it was important to procure animals whose supply would be the greatest and continue during the longest time possible. The cows were stalled in stables from which they did not move, were without exercise, in an elevated temperature for the purpose of economizing aliments of calorification, and every attention was paid to feeding them. They were given, in proportion to the increase of appetite, their food at discretion; this consisted essentially of saccharine matters, such as dry clover hay, feculent and saccharine roots, as potatoes, beets, the residue of grain, as bran, bread crusts and malt, which were seasoned with salt. Under the influence of this regimen their appetite increased rapidly, and the amount of food and drink soon exceeded that under ordinary conditions. Two things then occurred, either the animals fattened rapidly producing little milk, when they were handed over to the butcher, or, in the majority of cases, when they were well selected, they were converted into *milk machines*, not of inferior quality, as this fluid was richer in *lactine* and as rich in butter as the milk of cows fed upon the best pasturages of Normandy. In a year or eighteen months they gave from 18 to 20 litres of milk instead of 7, which is the maximum under ordinary states.

Like glycosuric patients, these cows were a prey to very great thirst and insatiable hunger. On comparing a cow with forced lactation and one of normal lactation with especial reference to the aliments of calorification contained in

the milk, viz., butter and lactine, M. B. found that in ordinary cases a good cow gave 7 litres of milk, containing 261 grammes of butter and 411 grammes of lactine. In cows subjected to the particular treatment indicated he found as the mean 18 litres, containing 640.5 grammes of butter, and 1080.8 of lactine. It is easy, then, to understand that the two essential conditions to the safety of glycosuric patients are invaded by the continuity and the amount of the secretion.

What happens to the animals submitted to this regimen? Precisely that which happens to diabetic patients. Tubercles always develop themselves in the lungs, and if they are not given to the shambles they emaciate or die frequently in twenty-four hours of terrific pneumonia similar to that observed in persons labouring under profuse diabetes.

From the comparison and interpretation of these facts we can deduce the first general formula of the etiology of tuberculization, viz., "that the continued and excessive loss of the aliments of calorification induces pulmonary tuberculization."

We shall now pass to another interesting fact in this connection. It has constantly been observed that monkeys, who have been imported from the tropical regions, after some months or some years of residence in the North, die with tubercles in the lungs, and yet, as at the Museum of Natural History at Paris, every attention is paid to simulate as near as possible the temperature to which they were accustomed, their exercises and liberty as well as their food. Pulmonary phthisis carries off all of them sooner or later in our inhospitable climate. It is the very care that is given to imitate their food in their native clime that contributes to this result. The enemy that is most injurious to tropical animals is cold. As the temperature of 38° R. is to be maintained, the surrounding temperature being below that of their native country, should the resources of calorification remain the same, they will be insufficient. Now, this is the case with the monkey; the continuance of insufficient aliments of calorification relatively to the wants of his organization leads to pulmonary tuberculosis, as persistence in deprivation of the same aliments produces it in diabetic patients and the cow treated in the manner stated.

What is true of monkeys applies to all tropical animals when taken to Northern climates. An exception may be found in the parrot, which being fed from the table upon almonds and fatty substances escapes the law of deterioration. The facts that have been stated are less clearly verified in man than in animals, because the experimental conditions want fixedness and duration; man accommodates himself to the regimen of the country to which he has been transferred, yet there are some facts of interest. The negro transported to Northern regions is more affected than the natives of such region. According to the reports of the English physicians the native troops of India suffer in this way, and further when the inhabitant of the plains changes his location for one more elevated, he is in the same condition as one who has moved from a warmer to a colder latitude. In an elevated region there is, from the state of the atmosphere, less to support temperature, the air is less charged with oxygen; from this cause the monks of St. Gothard are afflicted with phthisis. It may be stated, then, that the persistent insufficiency in the aliments of calorification, both as respects external temperature and the requirements of the organization lead to phthisis.

With this rule thus laid down for his guidance, M. Bouchardat next proceeds to arrange under it the facts which have been difficult of comprehension.

There are two conditions which should be separated from each other, insufficiency of nourishment and starvation. Insufficiency of the aliments of calorification is the plainest evidence of starvation. The attendants upon it are the disappearance of glucose from the liver, and the fat, with the exception of that which is indispensable to the bones and brain, also disappears with not less constancy than rapidity. The connection between abstinence and the excessive loss of the aliments of calorification held in reserve is very evident. Repeated abstinence, like the partial deprivation of the aliments of calorification with respect to the wants of the organization and temperature, acts in the same way as entire abstinence; it is a question of time and accidents which alone distinguishes them.

Reiterated abstinence, like absolute abstinence, lessens the resources of the

economy for maintaining the temperature of 37.°5 necessary for health; it renders it more difficult to re-establish the equilibrium when sudden cooling occurs; it modifies the nature of the residual matter or insoluble products which are eliminated from the economy; it diminishes the energy of the organs which concur to this elimination. and we may easily comprehend how it may predispose to the deposition of abnormal products or formations in organs whose functions are languishing, depositions which further contribute to increase the bad condition in which feebleness of functional action has placed these organs. We thus understand how reiterated abstinence renders reaction less sure and less decided after a person is chilled, and predisposes to the numerous diseases caused by cold. True starvation is the privation of all things essential to the maintenance of life and the preservation of health. What are these things necessary to the preservation of health in our cold or temperate regions? In the first place, varied and reparatory food, or, in other words, the richest aliments of calorification, such as fats, butter, and oil, such food being most valuable taken in sufficient quantities; excessive labour produces the same effects as are induced from insufficiency of the aliments of calorification. To this may be added want of proper clothing to support the temperature, for, as the temperature is lost, more aliment is required to sustain it, and hence a greater organic loss. want of protection by clothing therefore adds to the privation of aliments. This also is felt by the poorer classes. The sum, then, of that never-dying evil poverty, is: 1st, privation of good aliment of calorification; 2d, want of means of heating; 3d, want of flannel garments; and 4th, cold habitations, all of which resolve themselves into continued insufficiency of the means of resistance to external cold, proportioned to the wants of the organization.

The influence of poverty upon the development of phthisis in our great centres is fully appreciated by all who have examined the question. As an evidence may be cited the statistics of Geneva, by M. Marc d'Espine. Of 1000 deaths among paupers there were 233 from consumption, and of 1000 deaths among persons in easy circumstances there were only 68 from that disease.

Independently of the causes which have now been set forth there are numerous ways in which the same results may be induced, as from diseases which are persistent or which leave the patient in a languid condition, the wear of the forces of life after operations, in the female from lactation, mental distress, &c., while at the same time these may operate in the midst of luxury and abundance.

M. Bouchardat refers to the question with respect to the supposed greater prevalence of pulmonary consumption in cold than in hot climates. This view has been disputed by M. Rufz, who has studied the disease in the Island of Martinique. According to this learned observer, the creole women as well as mulattoes are decimated by the affection. A similar statement with respect to the blacks has been made by M. Laure. In the Southern States we have heard it stated that many negroes were victims of consumption, while this is a common affection among the whites. On the contrary, among the Esquimaux the disease is not known, as has been ascertained by Dr. Hayes. In connection with modes of life and the mortality from consumption thereby arising there are some interesting statements made by M. Bouchardat, all, however, conducing to the support of his positions.

M. Bouchardat appropriates separate chapters to the discussion of the several questions of the influence of age, sex. constitution, temperament. contagion, professions, reiterated excitation of the lungs, vaccination, inflammation of the pulmonary apparatus, diseases, clothing, climate, season, and hereditary transmission. To these we have not time or space to devote in this notice; it may be stated, however, that his observations are well worthy of study.

Upon the subject of the Prophylaxis and Hygiene of Pulmonary Consumption, as may be inferred, the rules he lays down originate in his interpretation of the causes which have been presented. The use of nutritious and heat-making food is strongly insisted upon in connection with air and exercise, while the functions of the skin and other organs are to be maintained.

The length of this notice precludes our entering upon the exposition of several other interesting essays contained in the supplement. They are upon the "Mucedineous Parasites most Injurious to Man," "the Training of Pugilists," and the "Use of the Urometer." There may be found much interesting and

instructive material for thought and guidance in these essays; but we must close, again expressing our indebtedness to the indefatigable professor for his efforts to enable his associates in the healing art to keep pace with the advance of discovery and the progress of medical truth. J. C.

ART. XX.—*Notes on the Despatch of Troops by Sea.* By CHARLES J. KIRWAN, Esq., L. R. C. S. I., etc., Assistant Surgeon H. M. 13th (Prince Albert's) Light Infantry. 8vo. pp. 110. Calcutta, 1859.

THE hygiene of the camp and of the ship has begun of late years to attract increased attention, though still not to that extent which it demands. To even the superficial thinker it must be evident that whatever has a tendency to secure the comfort, health, and vigour of the soldier, to preserve his life, and to sustain in him a buoyancy of spirits, whether in the barracks or in the field, on board the transport ship or within the fortress, even considered in a mere economic and military point of view, demands the serious consideration of every government. Whether it be one whose policy it is to keep up, in time of peace, an armed force, or, because being actually involved in war, it finds the necessity imposed upon it of raising up and maintaining troops for its defence.

Military discipline, however perfect, will not alone suffice to prepare for the contest an efficient soldiery. Bad health or actual sickness may render unavailable, in the hour of need, the services of the best appointed and most perfectly drilled army; while its exposure to various discomforts and petty annoyances which could have been effectually remedied by a little foresight, is calculated to impair its morale and detract from that *esprit de corps* so essential to its efficiency in the field.

The necessity often occurs for the transportation of troops to distant places by sea, consequently, the proper arrangement, economy, and discipline of transport ships becomes subjects of very serious consideration. In the work before us we are presented with the results of many years' experience of a British military surgeon of acknowledged position and talents in respect to this branch of military service.

From actual and repeated observation this gentleman has become convinced that, in consequence of a want of attention to the proper transporting of British troops on ship board, there not only takes place "an immense amount of destruction of the property of the soldier," and much temporary discomfort, but, in numerous cases, permanent loss of health, if not, perchance, of life also. The soldiers on board of transports may be sufficiently well and comfortably clad and fully fed on wholesome aliment; but neither one nor both will suffice to protect them from the baneful effects of exposure to cold and wet—the absence of suitable convenience for the strict cleanliness of both apparel and person, and the want of a proper alternation of exercise and rest, all of which are essential, at sea especially, to the preservation of a sound state of the mind as of the body. The suggestions he has made in reference to them, if fully and properly carried out, Assistant-Surgeon Kirwan believes to be adapted to render a phase in the economy of the soldier's life, as safe and comfortable as circumstances will allow, and to enable the troops on board a transport ship to enjoy and maintain a state of ease, health, and efficiency scarcely inferior to what they could enjoy in garrison on shore. They are all of them based upon personal observations made during the opportunities furnished to him in the course of actual service as surgeon for nine voyages with troops on board of transport ships.

In a separate chapter, Assistant-Surgeon Kirwan has indicated with great truth and clearness the proper position and duties of the medical officer in charge of the troops on ship board; the importance of his office, especially if he be viewed, as he should be, in the light of sanitary supervisor of the ship and men; the subjects that should be placed under his direction and control, and the necessity of immediate and implicit obedience to his directions in relation to such matters as he esteems essential for the preservation of the health and for the promotion of the true comfort of the entire ship's company, including officers, crew, and passengers.

It would be somewhat inconvenient for us to pass in review all the "notes" of Assistant-Surgeon Kirwan in respect to what is to be done when merchant vessels are employed for the transportation by sea of troops, in order, as far as it is possible, to adapt them for their office. We prefer to present a sketch of the model he has given of a ship expressly constructed for the despatch of troops by sea. By a careful examination of what he esteems to be the true ideal of a transport ship will be understood what must be done in order to bring the merchantman in the closest possible approximation to the model.

Various and weighty objections to the conveyance of troops in either men-of-war or merchant vessels, he remarks, might easily be adduced. Not the least of these, as regards most merchant ships, is their want of the necessary conveniences, while the employment of men-of-war for the transport of troops prevents them from exercising their proper functions. Independently of other advantages which would result in the substitution for these, of a class of ships expressly constructed for the transport service, one special recommendation in their favour would be found in the improved general health and more favourable state of *morale* or pluck in which the men would be landed: inasmuch as they would furnish what, in nine cases out of ten, cannot otherwise be done, appliances of a suitable description for the care of the sick and invalided, for preventing the spread of infectious or contagious diseases, for drying wet clothing in bad weather, for preserving at all times the cleanliness of the soldier's person and clothing, for the separation of married men and their families from the other portions of the ship's company, and for that continual drill so essential to the soldier-like bearing of the troops. From the want of these desiderata, as well as of means for the enforcement of strict discipline, the men are in danger, at the termination of a voyage, of being landed, a mob rather than a body of efficient soldiers.

The size of a vessel designed for the transport service should range from 2,500 to 3,000 tons register. It should have sufficient accommodations for a regiment of a thousand strong, with its proportion of women and children, and for stores and provisions to suffice for the longest period that may perchance elapse before the troops placed on board of her can be landed. The means of progression for a ship of this class, would be, in favourable weather, sails, but with the addition of a small steam power, from 250 to 300 horse, applied to a screw propeller, for the purpose of steaming through belts of calm, or of keeping way against light baffling head winds. During the prevalence of strong head winds the ordinary expedient of beating would, of course, have to be adopted.

The decks on which the troops are lodged should be free from every impediment to the free circulation of air. They should be provided with ports the same as the gun decks of a war ship, with the addition of the usual bull's eye port in the centre of the folding part, for the purposes of light and ventilation when it becomes necessary to close the larger ports. The upper deck should have as free a space as possible to allow of the parading and exercising the men. Immediately in front of the poop deck, which should occupy no more space than is necessary for the comfortable lodging and messing of about one hundred officers—naval and military—should stand the roof of the engine room, occupying the central portion of the deck. From hence to a point considerably in front of the main hatch, a space occurs where there are few obstructions, and which should be used as a parade and drill ground.

In front of the main hatch should follow a range of houses. 1st. A store-room, with shelves, in which supplies of every kind, for immediate use, could be stored. It should have a hatch communicating with the main stores in the hold, thus obviating the inconvenience of conveying boxes and barrels along the decks. 2d. An hospital and surgery; with shelves and everything essential for the proper and expeditious arrangement and dispensing of medicines. 3d. A school room, which might also serve as a library. 4th. Galleys or kitchens—divided into ship's, saloon, hospital and troops' departments; furnished with pumps communicating with the sea, and, in every part where the furnaces may be in the vicinity of the timbers, floored and lined with tiles. 5th. A wash-house, where the women of the regiment can be employed in washing and ironing the men's clothes. This room should be so constructed as to serve also to dry wet clothing in bad weather. That is to say—furnished with hooks on the walls and

ceiling-beams, and a steam drying apparatus, which should be supplied with the requisite amount of heat from the same fires which serve for the washing and cooking apparatus. The apartment to be provided with pumps, and tiled, like the kitchens—and in common with these latter should have the means also of discharging refuse water into the sea without deluging the decks in the vicinity. 6th. A lavatory for the men—Cleanliness of person and, consequently, the means for securing it, are essential to the preservation of troops on ship-board. 7th. A butcher's shop. This is an important appendage of a transport ship; preventing the filth and disgust caused by the practice of slaughtering animals on the deck, and furnishing a suitable place in which to hang up the meat until required for cooking.

These, with such other houses as may be found useful and for which there may remain room, would run forward so as to meet the roof of the forecastle; and the roofs of all combined, would form a spacious hurricane deck, broken only by the foremast and a few sky-lights and ventilating shafts, and furnish a fine promenade for the men. It should be kept clear of all lumber, with the exception, perhaps, of a few sheep pens.

Assistant Surgeon Kirwan suggests that from among the live stock taken on board a transport ship, hogs should be entirely excluded, in consequence of the amount of dirt and intolerable stench they create, and which cannot by any means be obviated. A supply of good, well-cured pork, hams, and bacon, will, he remarks, sufficiently compensate for the absence of the live animal, especially when we consider the nuisance to which its presence gives rise. The perfection to which the art of preserving milk has now been brought induces the author to believe that the presence of a milch cow might also be dispensed with. From the quantity of milk the animal furnishes at sea being very small, and the rapidity with which she sinks into a most miserable condition—motives of both economy and humanity combine in pronouncing her exclusion from on ship-board proper.

In addition to the foregoing hints in respect to the kind of arrangements and appliances requisite on board of ships destined for the transport of troops, much, Mr. Kirwan remarks, might be said in relation to the size, warming, ventilation and conveniences of the cabins allotted to officers, their mess and sitting-rooms. In the parts of the ship allotted to the troops, mention might be made of proper companion ladders, distinct from the hatchways—of suitable ventilating apparatus, and of other matters which, though apparently trivial when singly considered, are of vast importance when viewed as integral parts of a complete system of means having for its end, as well the personal comforts of troops *en route* by sea, as their maintenance in a sound condition of moral and physical health.

To enumerate every particular would be, as our author remarks, "to write out a specification for a well-appointed troop ship, a task which could be better executed by the naval architect, under the instructions of the officer whose province it may be to determine the class of vessels required, and the amount of accommodation to be allowed. Suffice it to say, he adds, that the ship should be of the first class, whatever her tonnage, with every improvement in naval architecture which may have stood the test of careful experiment, and with every appliance for the health and comfort of the men with which modern science has made us acquainted, so long as these do not tend to degenerate from comfort into luxury."

In reference to those particulars connected with the regulation and police of a transport ship, which, according to Assistant Surgeon Kirwan, should be promptly enforced upon the recommendation or direction of the surgeon in charge of the troops, we present the following brief enumeration: The airing of the bedding as often, and in such manner as the medical officer may direct. The cleansing of the upper decks as often as he shall consider them dirty. The prompt removal or, what he shall esteem, the proper disposition of all articles which he considers likely to have a pernicious influence upon the atmosphere of the ship. The clearing out, cleansing and fumigation of sleeping places to his satisfaction. The spreading of awnings where and whenever he shall consider them necessary. The indication of the times at which parades, punishments, etc. shall take place. The prohibition of the issue of rations which are consi-

dered by him to be bad, until they have been examined by a board of senior officers. The working of the ventilating apparatus at such times as he shall consider necessary for maintaining the purity of the air between decks. Attention, also, should be required to his recommendations regarding cooking, cleanliness of ship, and of the persons and clothing of the men, and as far as possible, also, for the prevention of accidents.

On the subject of *night watches*, Mr. Kirwan remarks as follows:—

"However beneficial it may be that troops when on board ship should be as much on deck as possible, the propriety of the four hours watches, night and day, is open to question. During the day there is nothing to be apprehended—but, from eight in the evening until sunrise is a period when the exposure to which those on watch are subjected is particularly prejudicial, and a fertile cause of sickness on board troop ships. Men are roused from their sleep in the sweltering atmosphere of between decks and hurried up into the damp and chilly night air. If the night be fine they lie down upon the decks, which are always more or less damp, and when the night is rainy they crowd together under some imperfect shelter, and get to some extent wet. Upon going below, the chances are that they lie down in their wet clothing, and sickness ensues. Would it not be better to discontinue altogether the soldier's watches on ship-board from eight in the evening until sunrise? Troops are not of the slightest use on deck at night, and the benefit which is supposed to accrue from their absence from between decks, is more than counterbalanced by the sickness which night exposure engenders. That turning a man out of his warm hammock at midnight to sleep, and sleep he will, on a damp open deck is prejudicial to health there cannot be a doubt. Many a soldier invalided for rheumatism and chest affections has, in all probability, laid the foundation of his disabilities while performing night watch on board a troop ship.

"A strong guard in a round-house on deck would be sufficient for all purposes, and as few sentries should be posted at night as possible. The cook-houses should be properly secured so as to need none, neither should any sentry be needed over the meat tubs, as these can be securely locked. The men being all asleep below, neither lights or sentries are required between decks. The only lights necessary would be in the hospital, and a safety-lamp with the guard in the round-house."

We cannot spare time to notice the very admirable hints presented in Chapter VI. on the victualling of troop ships—those on the management of the clothing, bedding, etc.; nor the sketch given in Chapter X., of a proper administration of the transport service—embracing the establishment of a special branch or department having for its duties the superintendence of all details connected with the embarking and disembarking of troops wherever destined.

The whole, in fact, of Assistant-Surgeon Kirwan's "notes" are replete with valuable suggestions, presenting the germs of vast improvements—leading in their development to the systematizing and simplifying of the transportation of troops by sea—rendering the service more prompt and efficient, and less destructive of the health, lives, and morale of the soldiers, and, at the same time, attended with less expense and less waste of public property. D. F. C.

ART. XXI.—*The Causes and Treatment of Imperfect Digestion.* By ARTHUR LEARED, M. D., Oxon., M. R. I. A.; Member of the Royal College of Physicians, London; Physician to the Great Northern Hospital, and to the Royal Infirmary for Diseases of the Chest; Lecturer on the Practice of Medicine at the School of Medicine adjoining St. George's Hospital; Physician to the British Hospital at Smyrna during the Russian War, etc. Second edition. London: John Churchill, 1861. 12mo. pp. 218.

THE fact that a second edition of this useful little work has been issued in the short space of one year after the publication of the first, is good evidence that its merits have been appreciated by the medical public.

The author introduces his remarks upon imperfect digestion with a concise and, in the main, accurate account of the physiology of this complex function. In chapters two and three he briefly enumerates the causes and symptoms of dyspepsia; and in the next three chapters describes, in a graphic and eminently practical manner, accidental or temporary, and habitual or chronic dyspepsia. His own observations, he tells us, have led him to recognize five kinds of habitual, digestive derangements, which he names as follows; partly according to the essential nature of the affections, and partly from certain symptoms which characterize them:—

1. *Slow digestion*—or simple dyspepsia.
2. *Undue acidity in digestion*—dyspepsia with acidity.
3. *Painful digestion*—dyspepsia with gastric pain; and frequently soreness.
4. *Foul digestion*—dyspepsia with fetid eructations.
5. *Impaired digestion, with mental disturbance*—dyspepsia in which mind symptoms predominate.

In the treatment of dyspepsia, dietetic or hygienic regulations are, undoubtedly, far more important in their results than the administration of medicinal agents. Although no diseases are more capable of receiving benefit from such agents than the functional disorders of the stomach, yet it is well known that this benefit is more slowly procured, and is less likely to be permanent if the employment of drugs be not simultaneously associated with the proper dietetic management of the disease under question. Our author very judiciously, therefore, devotes an entire chapter to the consideration of the quantity and quality of the food, the times of eating, the modes of cooking, &c. appropriate to the dyspeptic patient. After commenting upon the relative digestibility and nutritive value of different alimentary substances, he arranges them in three groups, in the order of their capability of being digested.

"*First Group.—Articles Easy of Digestion.*

"Mutton, venison, hunted hare, sweet-bread, chicken, young pigeon, partridge, pheasant, grouse, beef-tea, mutton-broth, milk.

"Whiting, turbot, flounder, sole.

"Stale-bread, biscuit, rice, tapioca, sago, arrowroot.

"Asparagus, sea-kale, French beans, cauliflower.

"Baked apple, oranges, grapes, strawberries.

"Toast-water, black tea, claret, sherry.

"*Second Group.—Articles Moderately Easy of Digestion.*

"Beef, lamb, rabbit, turkey, duck, wild water-fowl in general, woodcock, snipe; soups in general, eggs (not hard-boiled), butter.

"Cod, haddock, pike, trout, raw oysters.

"Potatoes, turneps, cabbage, spinach, artichoke, raw vegetables, especially lettuce; apples, peaches, apricots, pine-apple, gooseberries, currants, raspberries, mulberries; bread and other farinaceous puddings; jelly, marmalade, rhubarb, and cooked fruits in general.

"Cocoa, coffee, malt drinks, port wine.

"*Third Group.—Articles Difficult of Digestion.*

"Pork,* veal,* goose; the liver, heart, kidney, and brains of animals; salt meat, sausage, hashed or stewed meats.*

"Mackerel,* eels, salmon, herring, sprat, skate, halibut, salted fish in general, lobster, crab, prawn, shrimps, cray-fish, mussels,* cockles, scallops, and oysters, cooked.

"Olive oil, melted butter, hard-boiled eggs, cheese; new bread, muffins, and buttered toast; pastry in general,* suet puddings,* pancake, custards.

"Nuts of all kinds,* pears, plums, cherries, dried fruits; cucumber,* beetroot, Jerusalem artichoke, onion, carrot, parsnip, peas, beans, mushrooms, pickles.

"Chocolate, champagne, liqueurs."

"The first of these groups contains the articles most suitable for the dyspeptic, the second those only admissible in less severe cases, and the third may be con-

sidered a dietetic index expurgatorius, since few of the articles comprised in it should ever be taken by the invalid; while those to which an asterisk is attached should be regarded by him more in the light of poison than food."

The list of medicines used in the treatment of dyspepsia is a large one. It embraces the alkalies, certain alkaline earths, various mineral and vegetable acids, the vegetable bitters and aromatics, strychnia, cod-liver oil, the different chalybeate preparations, ipecacuanha in small doses, various essential oils, brandy, sulphuric ether, pepsine, certain salts of bismuth, silver and zinc, the compounds of mercury, opiates, hydrocyanic and carbonic acids, chloroform, some astringents, charcoal, hyposulphite of lime, the waters of certain ferruginous and other mineral springs, and lastly purgatives.

Alkalies generally exert but a temporary influence over dyspepsia. They are most useful in cases of acid dyspepsia accompanied with the presence of large quantities of lithic acid or lithates in the urine. Sometimes their prolonged use increases acidity by accelerating the flow of gastric juice.[1] Taken in excess they more or less interfere with digestion, by neutralizing the gastric acid and inducing a condition of the blood analogous to that produced by scurvy. They should be suspended as soon as phosphates appear in the urine. When the liver is inactive, and the tongue is furred or coated, soda is to be preferred to potash. When, on the contrary, the kidneys are sluggish and lithic deposits prevail in the urine, potash is indicated instead of soda. If, in conjunction with acidity, there is much irritability of stomach, magnesia will be found preferable to either soda or potash. It is an efficient remedy, according to our author, in gastrodynia; and is often valuable in combination with bismuth, in cases of dyspepsia with epigastric tenderness. In severe dyspepsia attended with nausea and vomiting, when solid food can hardly be taken, and in cases of pyrosis with acidity, lime-water may be employed. Dyspepsia, accompanied with spasmodic affections of the stomach, finds in ammonia an excellent and speedy remedy. In anæmic patients suffering from acidity of the stomach, and in cases of slow digestion when the tongue is pale and flabby the mineral acids are highly useful, especially the hydrochloric and nitro-hydrochloric. Lactic acid, so highly recommended by some practitioners, has been found by Dr. Leared to have no advantages over the other acids. The acid treatment should be discontinued as soon as uric acid or the urates in any considerable quantity are deposited in the urine. Our author thinks that the mineral acids act indirectly as antacids by improving the condition of the stomach. Without denying their tonic influence upon the stomach, we are inclined to believe that their antacid effect is explained by the fact, pointed out by Beaumont, Blondlot, Bernard and others, that when acids are introduced into the stomach the flow of gastric juice in a given time is sensibly diminished.

"Bitters are useful in most cases of dyspepsia in which the stomach partakes in a general debility of the system. They are well adapted for the phlegmatic, and for persons of languid circulation, not so much so for the plethoric, and those of the inflammatory tendency. But considerable differences are traceable in the nature and adaptations of this class of medicines.

"In simple slowness of digestion bitters are frequently very useful. In painful digestion, when the pain has been alleviated or removed by other means, they are generally advantageous. In acid dyspepsia, accompanied by debility, they are useful in combination with alkalies or mineral acids. But in the acid dyspepsia so frequently connected with latent gout, and in which there is a feverish tendency, bitters are often hurtful. In the intervals between the attacks of foul dyspepsia bitters are available."

After commenting upon the therapeutic properties of calumba, cascarilla, quassia, gentian, chiretta, the leaves of the marsh trefoil (*Menyanthes trifoliata*), the rind of the Seville orange, chamomile flowers, quinine, &c., and indicating the varieties of dyspepsia in which they should severally be used, Dr. Leared proceeds to advocate, in the following words, the employment of strychnia in the disease under consideration:—

"Speaking from extensive experience, I know no single medicine of more

[1] C. Bernard, Medical Times and Gazette, August 11, 1860.

value in this disease. Strychnia is particularly indicated in dyspepsia attended with nervous debility. In that numerous class of cases in which abnormal sensations in various parts of the body—as the throat, the head, or the limbs—are experienced, it will generally be found useful. It is the best tonic for the class in which mental symptoms predominate. But it also possesses excellent local effects, and acts by increasing the tone of the muscular coats of the stomach and intestines. When these coats are relaxed gases are generated, mainly owing to the retardation of the aliment in the cavities. No remedy has, in my hands, proved so permanently effectual as strychnia against this inconvenience. * * *

"Strychnia should always be given in solution to insure its effective diffusion in the stomach, and for sake of greater certainty in apportioning the dose. A proportion of some acid, as a drachm of dilute acetic acid to a grain of strychnia, should be prescribed with it, as the action of strychnia is greatly favoured by association with acids. The discrepant accounts given of it, in all probability depend on different degrees of acidity in the stomachs into which solid strychnia was introduced. As a bitter tonic, the fortieth part of a grain is a sufficient dose. When it is desired to insure specific action, the twentieth part of a grain may be given; but it will seldom be necessary to exceed this, as the good effects of strychnia on the gastro-intestinal muscular fibres are usually secured by a quantity that does not affect the voluntary muscles."

In many cases of painful digestion, attended with water-brash and heart-burn, cod-liver oil is of the greatest benefit. According to Dr. Leared, cardialgia or heart burn is produced by the generation of a small quantity of an impure, acrid butyric acid, which rises to the surface of the contents of the stomach, is brought to the cardia by the motions of this organ, instinctively rejected into the œsophagus, and transmitted to the mouth accompanied by the sensations of heart-burn. The miscibility of fat with butyric acid, he thinks, explains the relief of heart-burn by cod-liver oil. It acts by diluting the acid. Where the oil itself produces nausea, foul eructations and epigastric pain, it may, with advantage, be replaced by olein freshly prepared from the oil.

The preparations of iron best suited for the dyspeptic stomach and bowels are the ammonio-citrate, the ammonio-tartrate and the lactate. In atonic pyrosis resort should be had to the pernitrate and persulphate of iron and ammonia, or iron alone, on account of their astringent qualities.

In certain cases of slow digestion ipecacuanha, taken shortly before meals, often proves very useful. Dr. Budd thinks that it acts by increasing the secretion of gastric juice; Dr. Leared attributes its good effects to an acceleration of the gastric movements.

After giving it a fair trial, our author concludes that pepsin is of little or no use in dyspepsia. For pain after eating he recommends the nitrate and subcarbonate of bismuth; giving the preference, however, to the latter of these two salts. When subacute gastritis is the cause of the pain, bismuth will be injurious. When we wish to combine astringent with sedative effects, as in water-brash, and in cases of intestinal dyspepsia with a tendency to diarrhœa, the nitrate is to be preferred. In those cases of painful digestion in which, owing to the great irritability of the stomach, bismuth cannot be taken in sufficient doses, the nitrate of silver often has a happy effect. Dr. Leared considers oxide of silver an inferior remedy, but thinks that it may be occasionally substituted with advantage for the salts of bismuth. Chronic headaches, dependent on dyspepsia, are often benefited by a course of nitrate of silver. The most useful sedatives in painful digestion, and in gastrodynia and neuralgic affections of the stomach are opiates, hydrocyanic acid and chloroform. Opium, in some form, is the remedy for diarrhœa occurring after meals. Our author regards tannic acid in solution as the best of all the astringents in the treatment of dyspepsia complicated with water-brash. The chloride of calcium he regards as quite as efficacious in vomiting caused by sarcina as the hyposulphite of lime advocated by Dr. Jenner.

In an appendix to the work before us the reader will find an account of some experiments to determine the proximate cause of copious and sudden flatulence, together with observations and experiments upon the nature and origin of heart-burn, and the employment of Boudault's pepsine as a digestive agent.

As a useful *résumé* of our knowledge of the nature, causes, and treatment of a most troublesome affection, we recommend this work to the favourable notice of our readers. J. A. M.

ART. XXII.—*On the Parasitic Affections of the Skin.* By T. McCALL ANDERSON, M. D., Fellow of the Faculty of Physicians and Surgeons, Physician to the Dispensary for Skin Diseases, Physician to the Deaf and Dumb Institution, Glasgow, etc. London, John Churchill, 1861. 8vo. pp. 146.

THIS is a very useful practical monograph. In this country, quite as much as in Great Britain, cutaneous affections are, as subjects of accurate study, comparatively neglected. In France and Germany it is otherwise. There large special hospitals afford opportunities, such as ought to exist in every country, for the close investigation of these important maladies.

Dr. Anderson opens his book with a brief defence of, or argument for, special hospitals.

"Who can glance, were it but for a moment, at the progress in the different branches of medicine which has been exhibited during the last few years, without acknowledging that it is to the special study of particular complaints that this progress is to be attributed. And is it not a curious thing that, while hundreds of practitioners call out loudly against specialities, the majority make exceptions in favour of one or two classes of disease, which, according to them, fall to be appropriately treated in special institutions.

"This was very well illustrated a few months ago when a meeting of the metropolitan counties branch of the British Medical Association was called for the purpose of considering the subject of special hospitals. The gentlemen whom I am about to mention all condemned special institutions.

"Dr. A. P. Stewart, however, had no objection to the establishment of hospitals for consumption. Mr. Henry Thomson agreed as to the usefulness of hospitals for diseases of children and for mental diseases. Dr. Seaton thought that hospitals for the treatment of epilepsy were necessary. While Mr. Webber did not know that there was any great objection to hospitals for deformities—for skin diseases—for diseases of the eye and of the chest.

"So that these gentlemen, while stating themselves adverse to the establishment of special institutions, made exceptions in favour of hospitals for consumption, diseases of children, mental diseases, deformities, skin diseases, eye diseases, chest diseases, and epilepsy."

The parasitic diseases of the skin are enumerated by Dr. Anderson, as—

A. Cutaneous affections due to the presence of a *vegetable* parasite, viz: I. Favus. II. Tinea Tonsurans, of which there are three varieties: 1. Herpes Circinatus; 2. Sycosis; 3. Herpes Tonsurans. III. Alopecia Areata. IV. Pityriasis Versicolor.

B. Cutaneous affections due to the presence of an *animal* parasite: I. Phthiriasis. II. Scabies.

In regard to the four above-named affections, in which the parasite is a vegetable organism, Dr. Anderson alludes, without approval, to the opinion of Hebra, that they are all produced by one and the same fungous growth, varying in apparent characters according to its stage of development and the particular structure of the skin attacked.

The second, third, and fourth chapters are occupied with *favus*. Our author's view is very positive in regard to the actual dependence of this, as well as the other parasitic diseases, upon the presence of the parasite. He asserts that the opinion held by many that the cutaneous disease is owing to deranged nutrition, the parasitic growth being a secondary concomitant or result, is "altogether untenable in the present state of our knowledge." As to favus, he says—

"The discoveries of the microscope, the results of the inoculation of the parasite on man as well as on the lower animals and plants, the contagious nature of the disease, and the astonishing and never-failing success of the treatment,

form an ample refutation to the idea of its being a constitutional disease. There can be no doubt that as the advances which have been made in our knowledge of this subject, thanks to the discoveries of our continental brethren, become more and more widely disseminated, favus will come to be looked upon as a comparatively trifling disease, and instances will cease to be met with of poor creatures frequenting our dispensaries, their scalps covered with crusts or changed into parchment-like structures, and their heads denuded of hair, objects of disgust to themselves and of loathing to those around them."

Favus is then described, fully, as it attacks the orifices of the hair-follicles, the epidermis, and the nails. Of the first of these forms (*favus pilaris*), Dr. Anderson considers favus *lupinosa*, *scutulata*, and *squarrosa*, to be only different degrees or stages; the first being the earliest and most distinct, the last the most confluent. The favus *cup* is said *always* to develop itself in the orifice of a hair-follicle. Bazin declares that he discovered a rudimentary hair connected with such a cup even on the glans penis.

Favus of the epidermis is much rarer than that of the hair, and is almost invariably found to be conjoined with the latter. Instead of the cups, somewhat variable scaly-like crusts form, scattered upon a slightly reddened epiderm; the crusts being white, marked by yellow patches, in which the favus matter is detected in abundance.

Favus *unguium* is rare, and also secondary. The spores germinate beneath the nail, which becomes thickened, and gradually more and more yellow as the favus matter shines through.

The *inoculability* of the disease is held by our author to prove the dependence of favus directly upon the parasitic *achorion*. Bennett, Hebra, Remak, Vogel, Bazin, Gruby, and Deffis, have caused the transference of the affection from one person to another. The average time of incubation appears to be about forty days. Draper, of New York, communicated the account of a curious case to Bazin, in which favus was first transmitted from a mouse to a cat, and then from the latter to two infants. Instances of the ready contagion of this disease are often met with in the St. Louis Hospital, and other large hospitals, for skin diseases.

While dirtiness is the most potent predisposing cause, and the application of the *achorion Schönleini* the only exciting cause of favus, it appears to us to be going beyond his own intended meaning for our author to speak of dirt as the *sole* predisposing cause (p. 27). The whole tenor of the book, however, is consistent in depreciating the importance of constitutional causes or conditions in connection with parasitic diseases of the skin; and, consequently, in making a low estimate of the value of constitutional treatment. Dr. Anderson admits that a general disease, typhoid fever, for example, has a manifest influence upon the favus affection. He also grants that "some medicines, by changing the qualities of the blood, may act as poisons to the parasite, or, to use a milder expression, may change the nature of the soil which had previously been favourable to its germination." He affirms, however, that clinical examples of this are rare.

The basis of his treatment, then, is local and *paraciticidal*. The necessity of first *removing* the *hairs* of the part affected is strongly urged. Shaving the head will not suffice. Extraction is difficult on account of the brittleness of the hairs. Of the three modes mentioned, by the fingers, by forceps, and by the *calotte*, that by forceps is recommended. In the St. Louis Hospital *épileurs* are employed whose whole duty consists in extracting the hairs of patients affected with parasitic diseases. The *calotte* is a barbarous appliance, although still considerably used in France. It consists of a horrible compound of rye meal, carbonate of copper, pitch, rosin, and antimonial ethiops, made into a plaster, which is laid in strips upon the head; this in a few days being dragged forcibly off. Even death has sometimes followed this scalping process. Yet it is adopted by Baumés, of Lyons, and by the Sisters of Charity at Toulouse, to whom alone, by law, the whole care of children suffering with favus is confided. In Paris, too, a similar plan is employed by the Frères Mahon, who, although notorious quacks, are still retained upon the medical staff of the hospital of St. Louis.

Immediately upon the removal of the hair parasiticide applications are to be

made. Bichloride of mercury (two grains to the ounce of water, with a little alcohol) is generally preferred. Sulphur, turpeth mineral, and oil of cade, are also efficient in the form of ointment. Oil of cade is not, that we are aware of, used in this country; it is a tarry preparation made either from the common juniper or the juniperus excedrus, and is most resorted to in France.

Chapters V., VI., and VII., are devoted to Tinea Tonsurans. Dr. Anderson's classification includes, under this head, three affections: herpes circinatus, herpes tonsurans, and sycosis. All of these, he avers, are due to the presence of the same parasite, the *tricophyton*. The authority of Robin, Bazin, and Hardy, is referred to upon this point; while our author has confirmed clinically the declaration first made by Bazin, that these three affections are often met in connection with one another, and that one variety is capable of giving rise to another by contagion.

The *tricophyton* (of which, as of the other cutaneous parasites, a good woodcut illustrates the description) is stated to consist of an enormous number of oval spores, about 1-7000th of an inch in diameter, and a small proportion of minute tubes. In mass, the parasitic matter is of a pure white colour and powdery aspect, known from epidermic scales by the latter being yellowish or grayish, and much less in the form of powder.

The symptomatology of the three affections is described as being as nearly identical as difference of site will allow. In all—

"The first stage is chiefly characterized by the remarkably circular form of the eruptions, and by the alteration of the hairs; the second, by the change of the colour of the skin of the affected parts, and by the presence of the white powdery fungus on the epidermis and on the broken hairs; and the third, by the inflammation and suppuration of the hair-follicles and surrounding tissues, and, in consequence, by the disappearance of the fungus, alopecia (or the formation of hairs very much altered or diseased), and secondary eruptions. These three stages are, however, not met with in all the varieties equally."

Dr. Anderson repudiates, therefore, the opinion of Hebra, and many others, that there is a non-parasitic herpes circinatus. He believes, also, that herpes iris is a mere variation of the *tricophyton* disease. He names *erythema circinatum* and *erythema iris* as distinct from the parasitic affection—the difference being chiefly made certain by the microscope. In the diagnosis, however, he considers the elevation of the red circles and the furfuraceous desquamation, in herpes circinatus, to be important.

Sycosis is made out and distinguished from impetigo by the following diagnostic signs:—

"The erythematous spots and circles among the hairs, the rings of herpes circinatus on the neck, wrist, and other parts, and the raspberry-looking tubercles, give unmistakable evidence of the affection when these symptoms are present; while the alteration of the hairs, the patches of alopecia, and the discovery of the parasite with the microscope, render the picture complete."

The subsequent alteration of the parasite through the influence of suppuration may explain the error of Gruby in describing another vegetation (microsporon mentagrophytes) as the cause of sycosis, as well as that of Hebra, who looks upon the parasite as not essential but secondary or accidental to the disease.

The diagnosis of herpes tonsurans is especially easy in the second stage, when the hairs are broken off close to the skin and are covered by the grayish-white parasitic dust. The hairs are often very much thickened and their ends ragged when broken.

The *contagiousness* of these three forms of tinea follows, of course, as a corollary upon the proof of their parasitic nature; and, as Dr. Anderson asserts, it has also been clinically established.

In treatment, the parasiticidal plan recommended for favus is applicable equally to tinea, although depilation is less universally required. Our author has very little confidence in the curative power of arsenic or cod-liver oil in any of the parasitic affections.

Alopecia areata, dealt with in Chapter VIII., may be defined as consisting of patches of baldness from atrophy of the hair bulbs; this atrophy being due to the presence of the *microsporon Audouini*. Startin, Hutchinson, and Jenner,

admit the atrophy, but deny the importance of the fungus. The contagiousness of alopecia areata is very positively denied by some authorities. Dr. Anderson thinks he has seen evidences of it.

Pityriasis versicolor is treated of in Chapter IX. It is a pity that the term *chloasma* has not been universally adopted for this affection (characterized by patches of discoloration owing to the grape-cluster-like *microsporon furfur*), to distinguish it from pityriasis proper. We regret, also, that, as Dr. Anderson has chosen to use a term so nearly identical with the same for *morbus pediculosus*, he did not give it the equally correct spelling: phtheiriasis, instead of phthiriasis. In sympathy for our juniors, at least, we must protest against any *unnecessary* complication or obscurity in the nomenclature of skin diseases, already difficult enough.

Plica polonica is not recognized by our author as a special disease. Like Hebra, he believes it to be nothing more than a dirty skin, upon which the hair is matted from neglect; this affording conditions for the detention of spores of fungi floating through the air. We should depend more positively upon this opinion if it were, like most of those in this book, supported by the author's own immediate observations.

The last three chapters of the volume contain a full and interesting account of scabies. In regard to its symptomatology he objects with emphasis to the erroneous account given in popular works of the ordinary scabious eruption; which, instead of being most frequently *vesicular*, as it is described, is much more often papular or pruriginous, or even ecthymatous; although, as it depends chiefly upon scratching, it may assume almost any character.

In the treatment of scabies, Hardy's plan, by which the disease may be eradicated in a single day, is considered by the author as rather inconvenient or undesirable in private practice. It consists in rubbing the patient all over for half an hour with black soap, after which he is kept the same length of time in a warm-bath, and then anointed with a modification of the pomade of Helmerich, as follows: ℞—Subcarbonatis potassæ, ʒj; sulphuris, ʒij; axungiæ, ʒxij. The course is ended by a second warm bath the next day to remove the ointment.

Vleminckz, of Belgium, recommends a milder preparation, viz.: ℞—Calcis, ℥ss; sulphuris, ℥j; aquæ, ℥viij. This is boiled, stirred, and passed through a sieve before using.

A page upon the *acarus folliculorum*, containing a denial of the importance of this parasite in the production of acne, terminates Dr. Anderson's book, with which we think all readers interested in its subject will be pleased, even if they do not accept all his conclusions. H. H.

ART. XXIII.—*Epileptic and other Convulsive Affections of the Nervous System; their Pathology and Treatment.* By CHARLES BLAND RADCLIFFE, M. D., etc. etc. Third edition. London, 1861. 12mo. pp. 312.

THE first two editions of the work of Dr. Radcliffe were very fully noticed by us at the time of their appearance respectively. In the one before us the entire treatise has been, in the words of the author, "so re-written and re-cast," as to make it, to a very great extent, "a new book rather than a new edition." In it Dr. R. has incorporated the Gulstonian Lectures, delivered by him at the Royal College of Physicians, in the spring of 1860; the theme of which, together with all the author's additional thought and experience of the last three years, is directed to the enforcement and illustration of the views promulgated by him in reference to the physiology of muscular action, and the pathology thence deduced of the convulsive affections generally, from the simplest tremor to the most violent epileptic seizure.

Our readers are aware that, according to Dr. R., relaxation or elongation is the active state of the muscles, while contraction or shortening is their passive condition. He believes that there is a condition of polarity in the living muscle

during relaxation, by which the state of *relaxation is produced*, and that the state of contraction is nothing more than the necessary result of the muscle being released from its condition of polarity, and left to the operation of the attractive force which is inherent in the physical constitution of the muscular molecules. The transitory contractions which are said to belong to that form of contractility usually denominated irritability, Dr. R. supposes to occur during transitory lulls in the polar action which antagonizes contraction; while the prolonged contraction of *rigor mortis*, which is referred to that form of contractility denominated *tonicity*, he believes to derive its characteristic persistency from the fact that the polar action which antagonizes contraction is then at an end.

Dr. R. denies that the blood is in any sense to be viewed as a direct cause of muscular contraction, whether this be manifested normally or abnormally; on the contrary, it seems to him that the influence of the blood is exercised, most commonly, if not invariably, in producing the opposite state of relaxation.

"There is," he remarks, "every reason to believe that the living nerve consists of an infinite number of electro-motive molecules, and that the nerve-current is the sum of the action of these molecules. There is every reason to believe that the activity of the nerve-current is in proportion to the number and energy of these molecules, and that any change of the nerve-current in any part of the nerve will make itself felt, without loss of time, in every part of the nerve, provided the nerve retain its properties as a conductor. There is every reason to believe, also, that the nerve-current cannot begin or end, or experience any change of intensity, without immediately giving rise to the development of instantaneous currents of high tension in the nerve itself (*extra currents*), and in the neighbourhood of the nerve (induced currents). In short, there is every reason to believe that the nerve-current will behave in all respects like the galvanic current, for these two currents are analogous, if not identical, in all their characters."

"The view which is here taken of the operation of electricity in muscular action is indeed," he remarks in a later section, "one which supports and explains what has been already said respecting the operation of blood and nervous influence in muscular motion. That the blood should antagonize contraction is to be expected if the nerve and muscular currents have the power of producing this effect; for it may be supposed that the chemical changes which are wrought by arterial blood in muscle and nerve are as inseparable from the nerve and muscular currents, as the chemical changes in the galvanic cell are inseparable from the galvanic current. And that nervous influence should antagonize contraction, is, assuredly, no matter of wonder; if this be the action of the nerve-current. Nay, if this be the action of the nerve-current, it follows that nervous influence must antagonize contraction, for the nerve-current is a component part of, and the most intelligible idea in, nervous influence. Electrically considered, indeed, the operation of nervous influence in muscular motion becomes not a little simplified. Thus, for example, it is not difficult to understand that convulsion may be brought about by arresting the supply of arterial blood to one or more of the nervous centres of the head, and that in the case of death this convulsion should be separated from the final contraction of rigor mortis, by an interval of relaxation. For may it not be assumed—that the electrical activity of these centres will fail when arterial blood is withheld—that this failure will tell upon the whole nervous system, and set up a movement in the nerve-current which will lead to the induction of instantaneous currents of high tension in the muscles and elsewhere in the neighbourhood of the nerves—that a succession of these induced currents will be developed so long as the nerve-current is oscillating towards the lower level, which it is obliged to settle into for want of arterial blood—that convulsion will result from the action of these induced currents upon the muscular fibres—that relaxation will follow the convulsion when the induced currents cease to be developed, because the muscles will be then left to the undisturbed operation of the muscular and nerve currents—and that rigor mortis will come on eventually, because these currents are then extinguished? And does not the fact that an incitable muscle is more prone to contract when it is cut off from the influence of the nervous centres, or when it is deprived of a portion of its proper supply of blood, become somewhat less unin-

telligible when the idea of the nerve-current is substituted for that of nervous influence, and when the arterial blood is supposed to act by producing the nerve and muscular currents? For if these currents antagonize contraction, it will follow, as a matter of course, that there must be a greater proneness to contraction when a large amount of nerve-current is cut off by separating the muscles more or less completely from the nervous centres, or when a diminished supply of arterial blood necessitates a more scanty development of the nerve and muscular currents."

The foregoing views are not merely stated, by Dr. R., but are carefully compared with the facts in our possession bearing upon the physiology of muscular action, and its several abnormal conditions—tremor, simple convulsion, epileptiform convulsion, and spasm—and with the results of the action upon the muscles, of electricity and galvanism, as tested by a series of apparently well devised and carefully conducted experiments. If he can not be said to have established, beyond a reasonable doubt, the leading physiological and pathological principles for which he contends, it must, at least, be confessed that he has placed them in a very favourable point of view and clothed them with a degree of probability greater than would be supposed possible at first sight.

As a necessary deduction from his theory of muscular action, Dr. R. refers all of the convulsive and spasmodic affections to defective or disturbed innervation. Among their predisposing causes he includes everything which interferes with perfect hæmatosis—by the interruption of digestion and nutrition, of the regular action of the various excretory organs, and of the freedom of respiration. Everything, in fact, which has a tendency to impair the crasis of the arterial blood, and thus diminish or remove the natural excitant of the nervous centres—the proper sustainer of the normal condition of the nerve-currents. He recognizes, also, the fact that convulsions are the result of various diseases, all of which will be found, he attempts to show, to impair the functional activity of the nervous centres, either by reducing in them a vigorous circulation of arterial blood, or by causing an actual lesion of their organization.

As in the different varieties of tremor and convulsion, so, also, in the different varieties of spasm Dr. R. has attempted to show, from a careful review of all the facts connected with their history and pathological anatomy, that the common supposition that the muscles are provoked to take on this condition of morbid contraction by excessive stimulation of one kind or other is erroneous, but that their state of spasticity is due to want of vigour in the circulation and defective innervation.

The entire chapter on the treatment of ordinary epilepsy is replete with important suggestions of a strictly practical character, presented as the results of actual experience. It furnishes the groundwork of the therapeutics adapted to all the forms of convulsion and spasm. Every portion of it is of interest to the practitioner; we can only afford room, however, for the important suggestions thrown out by the author at its close.

Reflecting, Dr. R. remarks, upon the physiological and pathological premises laid down, the great desideratum in a case of epilepsy would seem to be the production of a more vigorous and sustained action of the nervous centres, convulsion being, according to these premises, the consequence of a failure in this action. Reflecting upon what he has said respecting the beneficial influence of cod-liver oil in epilepsy, and upon the possibility that this remedy may do good by furnishing one of the materials, namely, the fat, which is necessary to the full nutrition of the nervous tissue; it may be readily supposed that the remedy which has yet to be applied in cases of convulsion, is one which will supply in the first place this kind of food to the nervous system. But, he inquires, may there not be some other material besides fat or oil which may be wanted to secure the healthy nutrition of the nervous system? However mysterious are the properties of that system, this much is plain enough—that the nervous tissue cannot exist independently of proper nutrition, and that any means which will merely rouse its action, without at the same time providing for its nutrition, must in the end do harm, and not good. On examining the chemical constitution of nervous tissue, it is evident that phosphorus is a very important ingredient. It is evident, too, that the amount of fat and phosphorus has some

relation to the activity of the nervous centres. for both these ingredients increase from infancy to adult age, and decrease afterwards, as the influence of advancing age tells upon the system. "The facts, indeed, are well calculated to suggest the question whether phosphorus may not be as necessary as fat to the proper nutrition of a weak nervous system—as necessary as iron where there is a deficiency of red corpuscles in the blood; and this question once put, would seem to require an answer in the affirmative." Given in medicinal doses, Dr. R. has seen enough, he tells us, to know that the remedy may be given with the unmistakable promise of real and substantial good. The form in which he has prescribed the phosphorus is by dissolving grs. xij in one ounce of almond oil, by the aid of warm water, of which the dose is from five to ten minims. He has also given the phosphorated oil along with cod-liver oil, in a little orange wine, say five to ten minims of the first, to from two to four drachms of the second, twice or thrice a day.

Dr. R. believes, also, that a continuous galvanic current applied along the spinal cord, by means of a modification of Pulvermacher's electric band, may be an important help towards recovery in the case of some epileptics, though not, perhaps, in all.

From a careful study of the entire treatise we are persuaded that, even while the author's peculiar physiological views may not be received in their full extent, hints will be acquired in relation to the nature and causation of convulsive diseases generally, which cannot fail to lead to a rational therapeutics, and to a much greater success, both in their prevention and in their cure, than we can now boast of.

D. F. C.

ART. XXIV.—*Lectures on the Diseases of Women.* By CHARLES WEST, M.D., etc. etc. Second American from the Second London Edition. Philadelphia: Blanchard & Lea, 1861. 8vo. pp. 483.

THE volume before us comprises the revised edition of the portion of Dr. West's lectures first published in 1856, with those which have subsequently appeared, containing the author's account of the diseases of the uterine appendages—of the female bladder and urethra—the vagina and external sexual organs.

These lectures, thirty-three in number, present a series of instructions upon the leading sexual diseases of women, those, at least, occurring out of the periods of pregnancy, parturition and childbed; instructions which are especially valuable because of the caution and perfect candour evinced in their preparation and enunciation—the talents and experience of the lecturer, and the wide discrepancy of opinion which still exists among practitioners of eminence in regard to the true character and pathology and the proper treatment of certain of these diseases, reputed to be of great frequency.

There is a peculiar feeling of security and satisfaction experienced in the study of the writings of Dr. West, which we fear is not realized. to the same extent at least, in the perusal of the productions of very many of those whose reputation as medical teachers may even, perhaps, exceed that of our present author—a security and satisfaction arising from the conviction that his sole aim is truth—that he deals, as far as in him lies, with facts accurately stated, and in no instance intentionally perverted from their legitimate bearing to establish some favourite theory or practice.

While Dr. West makes free use of the labours of others occupied in the same field of inquiry with himself, so far as these are available for his purpose, his leading deductions are drawn, in great part, from his own personal observations. It is this, taken in connection with the ample field he has so long enjoyed for the clinical investigation of most of the diseases of which he treats, and with his habits of close investigation and careful analysis, which gives to his teachings a degree of authority scarcely to be claimed, to a similar extent, at least. by any mere compilation—by any system of pathological and practical teaching based upon facts, however unexceptionable, which the author has not gathered

from his own personal observations, but owes almost exclusively, if not entirely to the researches of others.

Every portion of the lectures before us may be consulted with profit. In addition to the first twenty lectures, a notice of which was given by us when they first appeared, some five years ago, we would direct particular attention to that portion of the twenty-third lecture which treats of a form of inter-pelvic disease to which investigation has been directed, within a few years past, chiefly by the French writers. We allude to tumours formed in the immediate vicinity of the uterus, by the effusion of blood either into the cellular tissue around the organ, or into the peritoneal cavity in the *cul-de-sac* between the uterus and rectum. The hemorrhage, in both instances, being usually associated with some previous disorder of the menstrual function—often with the temporary suspension of the catamenia; the congestion of the sexual organs relieving itself by a profuse outpouring of blood. The affection to which we refer has received the appellation of uterine, retro-uterine, or peri-uterine hæmatocele.

The history of these intra-pelvic hemorrhages, their seat, causes, symptoms, and course—their diagnosis from extra-uterine pregnancy, from retroversion of the uterus, from pelvic abscess, and from ovarian tumour, together with their prognosis and treatment, will be found laid down in the twenty-third of the lectures before us with as much clearness and definiteness as the observations in respect to them recorded by different writers up to the present time would seem to warrant.

From the few cases upon record, it is impossible to determine with any degree of accuracy, either the comparative frequency of the two varieties of uterine hæmatocele—the intra- and extra-peritoneal—or the degree of danger by which they are respectively attended. Dr. West was able to collect the histories of only thirty-seven cases, and many of these very meagre in the requisite details. These, with the addition of four other cases, which fell under his own observation, make an aggregate of *forty-one*, of which *thirty-three* terminated favourably, and *eight*, or 19.5 per cent., in death. Dr. W., however, is inclined to believe that the actual fatality of these intra-pelvic hemorrhages is much less than would be inferred from our present imperfect data. Many cases, unquestionably, have escaped recognition. The disposition to the spontaneous absorption of the effused blood, unless the quantity poured out has been enormous, seems to be very great, and menstrual disorder and abdominal pain have probably often passed away without a suspicion having arisen of their connection with hemorrhage around the uterus, or into the cavity of the peritoneum.

"Still," remarks Dr. W., "every allowance being made for the influence of these circumstances, uterine hæmatocele must, I imagine, be always regarded as an accident of a much graver kind than mere inflammation of the cellular tissue in the neighbourhood of the uterus or of its appendages."

In respect to treatment, two nearly opposite plans have been proposed: the one entire expectant; the other, the complete evacuation, by an early puncture, of the sac. *Fourteen* of the 41 cases, referred to by Dr. W., were treated on the expectant plan; of these, *eleven* recovered, and *three* died. The remaining *twenty-seven* cases were treated by puncture; of these, *twenty-two* recovered, and *five* died. But, as the lecturer correctly remarks, we should hesitate to draw any positive conclusions from such slender data. He considers that "neither plan can be regarded as absolutely the best," but in the adoption of either the special circumstances of each case must guide us.

"In three of my cases, that alone excepted in which the effusion had already become a chronic evil, the puncture was followed by peritoneal inflammation, which was of great severity; and the existence of an opening in the vagina did not in that instance prevent the establishment of a communication with the bowels, and the discharge of a large quantity of blood per anum. In some instances, too, the fibrin of the blood forms, by its coagulation, a thick layer within the sac, and prevents the escape of the fluid contents after puncture with the trocar; while the enlarging the opening with a bistoury, seems to be free neither from the dangers of hemorrhage on the one side, nor from those of inflammation of the cyst on the other. The complete emptying of the cyst, its subsequent washing out with water, and the injection of a solution of iodine

into it, as practised by M. Velpeau, and advocated by M. Robert, appear to me hazardous proceedings, except when resorted to quite in the chronic state of the affection, when all disposition to hemorrhage has ceased, and the susceptibilities of the cyst wall have become blunted by the lapse of time. In the earlier stages of the affection, absolute rest, local depletion, and the ministering to each symptom as it occurs, are the indications which we should endeavoar to fulfill; while the presence of a tumour even of considerable dimensions, or even its increase to some extent after its first discovery should not, I venture to think, lead us to puncture it, apart from some very serious ill, or suffering clearly attributable to it."

After puncture, the great hazard seems to Dr. W. to be that of the supervention of inflammation, and his own experience leads him to regard this as very considerable, notwithstanding we have it in our power to control it by active treatment.

Seven lectures, from the twenty-fourth to the thirtieth, both inclusive, are occupied by a consideration of the pathology and treatment of the diseases of the ovaries. These lectures present a very full and—considering the obscure character of some of the affections—a very satisfactory account of ovarian inflammation, in its acute and chronic forms—of ovarian abscess; of cystic and colloid growths of the ovaries, and their general course and termination—of ovarian dropsy, its symptoms, diagnosis, prophylaxis, and treatment—the measures proposed for its radical cure, with a very full and candid consideration of the question as to the propriety of the practice of ovariotomy which, within a few years past, has been proposed and somewhat extensively practised, as a proper measure, in cases in which there exists a diseased condition of the ovaries.

The entire series of lectures devoted to the description, history and management of the several morbid conditions of the ovarian bodies are well deserving of an attentive study. The question of the true nature and causes of these morbid conditions is examined with great ability, while the propriety and value of the leading plans of treatment proposed for certain of the chronic affections of the ovaries are discussed with commendable caution and frankness, and an endeavour is made to arrive at a correct decision by a careful and unbiassed examination of the proper deductions that are to be drawn from the best authenticated statistics within our reach.

With respect to the much discussed question—the propriety and beneficial results of ovariotomy—it appears to Dr. W. that while some points involved in it must be still considered as unsettled, there is ground sufficient for certain conclusions which he fears must be considered as unfavourable to the performance of the operation.

"The chief grounds," he remarks, "for this unfavourable opinion may be summed up under the three following heads:—

"1st. The rate of mortality from the operation does not appear to be in course of diminution, as the result of the accumulated experience and increased dexterity gained by its frequent repetition.

"2d. Unlike most operations in which anything like the same rate of mortality occurs, it is scarcely admissible in the doubtful and desperate cases to which the Hippocratic axiom '*ad summos morbos, summæ curationes,*' applies. The cases in which it may be hoped that the disease if left alone will advance tardily or become stationary, those in which something may be anticipated from other less hazardous forms of interference, are the very cases that yield the successes on which it has been sought to establish the merits of ovariotomy. It is proved to be very hazardous indeed in the young; it is believed by some very competent surgeons to be attended by so much danger in those past the middle period of life, that they have proposed to regard the operation as contra-indicated in all women who have exceeded the age of forty-five years. The compound cysts, the cysts with solid matter, the malignant, and quasi-malignant growths, those, in short, whose rate of progress is commonly most rapid, which are the most burdensome to the patient, are attended by the greatest suffering, and admit of the least palliation by other means, are precisely the cases in which the surgeon shrinks most from ovariotomy. In the table drawn up by Mr. Humphrey, who himself is an advocate of the operation, cases of this description yielded when

operated on 19 deaths to 20 recoveries; in my own table, deduced from a rather larger collection of facts, 56 deaths occurred to 62 recoveries.

"3d. Not only is the operation so hazardous in those very cases where it is really most called for, that many surgeons shrink then from its performance; but even in instances that may be selected as the most favourable, we have no sure grounds on which to rest our prognosis as to its issue. 'It is, in short, a venture at haphazard, since the medical practitioner is never able, in spite of the large experience already accumulated, to foretell the issue of the operation with the same certainty as guides him in undertaking other serious surgical proceedings. It has, indeed, been seen, in numerous instances, that extirpation of the ovary, though performed under the most favourable conditions, and by the most skilful hand, and without the occurrence of any untoward accident, has yet ended, in a few days, sometimes even in a few hours, in the patient's death.'"

These three reasons, the high mortality which experience and dexterity have failed to lessen; the special hazard attendant on those cases where yet the operation is specially indicated, and the utter uncertainty in which we find ourselves, even in the most favourable cases, as to its probable result, have been those which have chiefly influenced Dr. W. in the formation of his opinion as to the general inexpediency of performing ovariotomy.

The fallacy of the argument in favour of ovariotomy, based on the allegation that it is not attended by even as high a rate of mortality as are many other operations constantly taught and frequently practised, is clearly exposed. He does not deny that there may exist cases of ovarian disease in which, it is probable, the performance of the operation of extirpation by the knife may be justifiable. But, he remarks—

"At present, we are not in a position to lay down the indications justifying ovariotomy, or if we can succeed in sketching them in our study we cannot aver that they exist in any case which we meet with in practice; nor can we venture on any reliable grounds to express a prognosis as to the issue of our interference even when the operation has been performed with the greatest success and the fewest difficulties. Till we can do this, however, the operation seems to me to take its place by the side of those exceptional proceedings, the expediency of which must be determined by each one for himself after a careful consideration of the peculiarities of the case and the idiosyncrasies of the patient."

We have indicated, for special consideration the lectures, in the volume before us, on uterine hæmatocele and the leading ovarian diseases, not because we consider that the author has treated of the maladies in question with greater fulness and ability than he has the others which fall within his course, or that he has thrown any additional light upon their true character—more clearly determined their diagnosis, or laid down a more exact and certain plan for their treatment; but rather from the obscurity in which the majority of the diseases alluded to are involved, the very great difference of opinion existing among the leading authorities of the day on almost everything which regards their pathology and treatment, and the thorough and candid investigation which Dr. W. has made of all the facts that have a tendency to render their diagnosis and prognosis, as far as possible, clear and certain, and to throw system and efficiency into their therapeutical management.

The whole thirty-three lectures are deserving of careful study. Every disease embraced in them is ably discussed, and with evidently a conscientious desire to lead the reader to a correct understanding of its nature, and a just appreciation of the value of the methods recommended for its cure or alleviation. From the teachings of no one will more definite views in reference to the same class of maladies—their pathological character and their therapeutical management, be acquired than from those of Dr. W. as embodied in the lectures before us, and expressed in language clear, terse and unaffected. D. F. C.

ART. XXV.—*The Diseases of the Prostate, their Pathology and Treatment.* Comprising the second edition of "The Enlarged Prostate," and a dissertation "On the Healthy and Morbid Anatomy of the Prostate Gland" to which the Jacksonian prize, for the year 1860, was awarded by the Royal College of Surgeons of England. By HENRY THOMPSON, F. R. C. S., &c. &c. London: John Churchill, 1861. 8vo. pp. 364.

IN the number of this journal for April, 1858, we gave a very full notice of the work of Mr. Thompson, entitled "The Enlarged Prostate, its Pathology and Treatment." In the spring of 1861, the Jacksonian prize, the subject of which was "The Healthy and Morbid Anatomy of the Prostate Gland," was awarded to this surgeon by the Council of the Royal College of Surgeons. In the volume before us this prize essay has been incorporated with the work first mentioned.

In this way considerable and very valuable additions have been made to the original volume to which we took great pleasure in inviting the attention of the profession. All that part which relates to the general, descriptive, and pathological anatomy of the prostate has been much augmented; those portions devoted to the subject of treatment, in its various departments, have been increased, and sometimes altered; while much of the old matter has been rearranged, and some rewritten, so as to render the work more complete and more useful. A number of new plates, which are admirably executed, have also been added, for the purpose of illustrating important points in pathology.

The views of Mr. Thompson in regard to the anatomy, the physiology, and the pathology of the diseases of the prostate, although given more *in extenso* in the present publication, are the same with those set forth in the volume already noticed in this journal, and it will be unnecessary to remark upon them again. We may limit ourselves, on the present occasion, to noticing the changes made in the chapter on the treatment of enlarged prostate.

Atony of the muscular coat of the bladder is added to the list of evils described as consequent upon enlarged prostate, from the retention of urine and habitual distension of the bladder. To resuscitate the lost function Mr. Thompson recommends cold affusion suddenly made on the abdomen twice a day, cold injections into the bladder, and these failing the passing a current of electricity by applying one pole to the lumbar region of the spinal column, and the other to the perineum and hypogastric regions alternately. A very mild current, he adds, has been passed, it is said with advantage, after the failure of a less direct route, by applying the latter pole (the one on the perineum) to the neck of the bladder, through the urethra. We have seen ourselves, in one case, recovery of the power over the bladder to follow the application of electricity, which was passed through the bas-fond of the bladder and part of the prostate by means of a sound introduced beyond the prostate into the rectum and another through the urethra into the bladder.

In *chronic cystitis*, the consequence of prostatic obstruction, croton oil is no longer recommended as a counter-irritant; and the best method of making permanent counter-irritation is described as that of rubbing a moistened stick of nitrate of silver on the skin above the pubes, first removing a portion of the hair. To the list of medicines administered internally, as possessing most value in chronic cystitis, senega and couch-grass (*Triticum repens*) are added. The decoction of senega, Mr. Thompson declares, he has found to exercise a greater influence on the mucous secretion of the bladder than any other remedy. He was led to try it from its reputation for controlling the bronchial catarrh of elderly people. An infusion of the underground stem of the couch-grass,[1] in doses of from half a pint to a pint in the twenty-four hours, is an agent from which he has derived much advantage; he says that where the indications are to lessen the frequency and the pain of micturition, it is unquestionably useful, often affording relief when buchu, pareira, uva ursi, &c., have failed.

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[1] For the method of preparing this infusion, see Quarterly Summary, p. 217.

When there is a phosphatic deposit in the urine, while this is loaded with mucus and is ammoniacal or fetid, Mr. Thompson says that he has often witnessed the good effect of injecting very dilute solutions of the acetate of lead, about one-fourth, or one-third of a grain to the ounce of water. A few ounces of plain warm water should first be injected, and after remaining about half a minute, permitted to run out. The solution of lead should only remain from thirty to fifty seconds.

The instrument of his own invention to be employed for effecting the reduction of enlarged prostate by compression, which was described in his former work, Mr. Thompson has evidently thrown aside after further experience. The risk encountered of irritating the parts by attempts of this kind, he now says, does not compensate for any little benefit attained, and which is mostly only temporary in its character. Hence, he adds, he does not advise adoption of any known method of compression, believing that in most cases the progress of the disease is more retarded by good general management of the case, and the avoidance of irritation in every form, than by any specific attempt of a mechanical nature to reduce the tumour or dilate the neck of the bladder. The other additions to this chapter, on the treatment of prostatic enlargement, are on the subject of the use of electricity for attempting the reduction of the tumour, and of this Mr. Thompson speaks unfavourably.

In its present state the work of Mr. Thompson is by far the best with which we are acquainted, in any language, on the important subjects of which it treats; and we take sincere pleasure in calling to it the attention of the profession.

W. F. A.

ART. XXVI.—*The Placenta, the Organic Nervous System, the Blood, the Oxygen, and the Animal Nervous System, Physiologically Examined.* By JOHN O'REILLY, M.D., etc. etc. 8vo. pp. 204. New York and London, 1861.

THIS is the second edition of a somewhat curious, but, at the same time, it must be confessed, an interesting treatise. Its author has made the attempt to penetrate the mystery by which, heretofore, the nature and the seat of animal life have been invested, and to trace not only its mode of action, but the very apparatus, in all its parts, through which it produces the various vital phenomena. Nerve-action and life-action are with him synonymous. In the organic nervous system he locates or centres that intangible principle by the presence of which living organized matter is distinguished from that which is dead and inorganic—which preserves the body from decomposition, and, when roused into activity through the agency of the blood and oxygen, brings into action the function of respiration, creates animal heat, effects digestion, hæmatosis, and nutrition, the growth of the body, and secretion, depuration, and excretion, all, in short, of the phenomena of life, from the evolution of the ovum—the development of the fœtus, the several changes which occur in after-life—the production of disease and likewise its removal, whether by the exercise of an inherent recuperative power or under the modifying influence of foreign curative agents. Nay, even the operations of the animal nervous system, and of the intellect itself, are, according to Dr. O'Reilly, dependent upon and subordinate to the action of the organic nervous system.

We are well convinced that a full recognition of a vital principle or influence, as the sole cause and sustainer of the phenomena of the living organism, and of the nervous system as its motor, regulator, and distributor, is essential to a satisfactory solution of the physiology, pathology, and therapeutics of the human system, and we look with approval upon every attempt to bring us back to the doctrines of vitality and of nerve influence; to repudiate which such strenuous efforts have, of late years, been made in certain quarters. We would, therefore, ask for the work of Dr. O'Reilly a favourable reception; not because its author can be said to have been successful in the establishment of the doctrines advanced by him in relation to life and nerve action, but because of our belief

that a study of the treatise will be calculated to open a wide field of inquiry, the proper cultivation of which is destined to yield valuable fruit.

In the volume before us will be found a fund of materials for thought, the accumulation of which has evidently cost its author no trifling amount of research; and, likewise, a series of inductions which cannot fail to arrest the attention of the reader, and incite in him a desire to investigate the premises upon which they are predicated with the view to test their validity.

It is true that there is scarcely a page of it which does not present some startling proposition; all of which may, possibly, turn out, in the end, to be truths—but at present it is very certain that they can claim but little support from known physiological and pathological facts, or from any safe course of analogical reasoning. Although it cannot be denied that the author dogmatizes far more than he reasons, still his exposition of nerve action invites to its candid perusal all who are not blind to the many very serious difficulties which beset the more popular doctrines in respect to life and its phenomena, and would desire to see pathology become the legitimate offspring of a correct physiology.

The following propositions will give to our readers an outline of the views of Dr. O'Reilly in respect to the anatomy and physiology of the placenta:—

The placenta bears a strong resemblance to the *liver* in its anatomical organization and its function. It is composed of four sets of vessels, connected together by cellular tissue. Two of these sets enter it in large trunks, namely, the maternal uterine arteries, which convey the arterial blood from the mother to the placenta; and the hypogastric arteries, which carry back the blood to the placenta after its circulation in the fœtus. Two sets of vessels commence in capillaries, namely, the umbilical vein, which conveys the arterial blood to the fœtus; and the uterine veins, which enter the decidua uteri and discharge their contents into the uterine sinuses, and through these into the venous circulation of the mother. The uterine arteries, as well as the hypogastric arteries, subdivide into innumerable branches, ultimately terminating in capillaries. Retinæ of organic nerves encompass and form plexuses round these arteries, sending twigs into their coats. The organic nerves of the maternal uterine arteries form glands at the capillary terminations of the arteries; the same is true also of the nerves of the hypogastric arteries. The glands of the two sets of vessels inosculate and freely communicate. By the combined influence of the organic nerves derived from the mother and fœtus in the placental lobule or gland the blood is arterialized and conveyed thence by the capillaries through the trunk of the umbilical vein to the fœtus, while the impure blood is carried back by the capillary maternal uterine vessels to the uterine sinuses. According to Dr. O'Reilly, there is every reason to believe that the oxygen of the maternal arterial blood is united with the venous blood of the fœtus by the action of electricity.

D. F. C.

ART. XXVII.—*The True Physician. An Anniversary Discourse delivered before the New York Academy of Medicine*, November 7, 1860. By JOHN WATSON, M. D., President of the Academy. New York, 1860. 8vo. pp. 44.
Address delivered at the Opening of the New Clinical Lecture-Room of the Philadelphia Hospital. By Dr. J. L. LUDLOW, One of the Medical Board and Lecturer on Clinical Medicine. Philadelphia, 1861. 8vo. pp. 26.

AMONG the numerous occasional discourses, anniversary addresses, and orations delivered every year by medical men on subjects having a direct or indirect bearing upon questions of interest to the profession there will be found some which rise far above the general standard, as well in manner as in matter, and deserve to be rescued from the common oblivion to which these productions are, for the most part, speedily consigned. Among these our readers will, we think, agree with us are to be ranked the two discourses whose titles stand at the head of the present article.

The anniversary discourse of Dr. Watson is on a subject of paramount im-

portance, and one he has treated with great judgment and truthfulness, and in a pure and polished, and vigorous style.

It may be, unfortunately, that the ideal conception of the true physician—one who shall combine in himself the qualifications of an able and successful practitioner, a classical and general scholar, an accomplished gentleman and a sincere and devout worshipper of God—is less frequently recognized amid the ranks of the profession than it should be: still, there have been, no doubt there still are many physicians who approximate more or less closely to the ideal standard. Nor are such to be found only among those whose transcendent talents, whose achievements for the augmentation and furtherance of medical knowledge and skill, or some other special cause, have enabled them to step forth from amid their fellow-practitioners, and command a celebrity to which these may not aspire. Amid the mass of the profession—amid those whose daily duties are performed solely at the bedside of the sick, will be met with many who to minds imbued with that knowledge, judgment and skill, which are the results of systematic study and well improved experience, add those moral qualities and those graces which give strength, and efficiency, and polish to their other acquirements—enabling them to win and secure confidence, and to control without offending the errors, prejudices, and follies of all with whom they come in contact—and, in this manner to obtain a fair field for the exercise of their acumen in the detection of the presence, and seat, and character of disease, and for the skilful direction of the means at their command for its removal.

To the accurate and most skilfully executed portraiture of the true physician given by Dr. Watson we call the attention of those without as of those within the pale of the profession. If we are forced to admit that, in all its traits, it is never realized in any single physician—that it is a mere ideal painting copied from no one individual, but combining single excellencies obtained from many individuals—it is no reason why it should not serve as the model, from their greater or less similitude with which the validity of the pretensions of the medical men of their day and neighbourhood to the character of true physicians are to be judged of by the public; while to those who are of the profession and aspire to be in fact true physicians it will constitute the standard after which they are to endeavour, in all things to pattern.

The address of Dr. Ludlow was pronounced before one of, perhaps, the largest classes ever assembled in this city for the clinical study of disease, and in an hospital which affords to the student gratuitously the most ample facilities and accommodations. The occasion on which the address before us was delivered was the inauguration of the new lecture-room which the managers of the Philadelphia Hospital had recently caused to be erected.

The leading theme of the address is the rise and progress of bedside medical instruction—that is to say of systematic clinical instruction in hospitals, conducted by professors appointed for the purpose. This department of medical teaching Dr. L. traces back to the latter half of the seventeenth century. It is more than probable that, from the very first establishment of institutions appropriated for the reception and treatment of the sick, it was in these the physicians in charge acquired a more exact conception of the phenomena and characteristics of disease and of their ordinary course under the plans of treatment then pursued. It was not, however, until about the year 1640 that a proper course of clinical instruction was first established, in Holland, particularly at Utrecht and Leyden. Among the most noted clinical lecturers of the latter city will be found the name of the illustrious Boerhaave; under whose instructions some of the most distinguished physicians of Europe were educated, and who, in their turn, scattered far and wide the good seed they had received from him.

Clinical teaching was first introduced into England after the middle of the eighteenth century, and soon after this was practised in different parts of the continent of Europe. In France, however, it was not until near the close of the century that clinical lectureships were formally established. But, though France had been thus tardy in providing for bedside medical instruction, she quickly made up by her efficiency in this respect what she had lost by her tardiness. The number and excellency of her clinical institutions at the present time are, perhaps, unrivalled.

It is impossible to say at what period regular clinical instruction commenced in this country, though it is probable that few attempts were made for its establishment until within the last thirty or forty years of the past century, and then, and even down to a much later period, from the few facilities furnished by our hospitals for its prosecution, the best of the clinical courses of which our country could boast, were unsystematic and superficial. A new impulse, however, has of late years been given to bedside instruction, and we can now boast of increased facilities for its pursuit on the part of those who are engaged in conducting it, and of those, also, whose desire is to profit by it, that cannot fail speedily to approximate the clinical instruction of the United States, in character, to that of France itself. Here and everywhere bedside instruction has come to be recognized, as it should always be, an essential part of medical education: no medical school can at this time be considered qualified to teach which cannot afford ample opportunities for its prosecution.

We commend the address of Dr. Ludlow to the notice of our readers. It furnishes, it is true, but a meagre outline of the history of clinical medicine—one, nevertheless, which is neither devoid of interest nor instruction. The entire address is conceived in a proper spirit and couched in correct and vigorous language.

D. F. C.

ART. XXVIII.—*An Effort to shorten the Duration and diminish the Pain of the First Stage of Labour; with a Record of One Hundred and Forty-seven Cases.* By B. FORDYCE BARKER, M. D., Obstetric Physician to Bellevue Hospital. New York, 1861. 8vo. pp. 11.

On the Use of Anæsthetics in Midwifery. By B. FORDYCE BARKER, M. D., Professor of Midwifery and Diseases of Women in the Bellevue Hospital Medical College, etc. New York, 1861. 8vo. pp. 17.

THESE two essays claim especial attention from the interesting nature of the subjects discussed in them, and the character which is sustained by their author as an experienced, successful, and judicious practitioner and teacher of midwifery.

The object and scope of the first are very fully expressed in the title. The end to be attained by the effort indicated is certainly a most desirable one. The agent by which Dr. Barker proposes to attain that end is the extract of belladonna administered during the latter weeks of pregnancy. The efficacy of his proposed agent, the author informs us, he has been able to test in only a very limited number of the cases of labour which have fallen under his notice—inasmuch as in many of the cases attended by him the patient was not seen until parturition had already commenced; while in others the labour came on a very few days after the use of the belladonna had been entered upon.

His endeavour has always been to commence giving the article about two weeks, as near as may be, before the completion of gestation. As, however, the data for the formation of a correct estimate was, always, necessarily uncertain, the length of time the belladonna was taken varied considerably, in different cases, from the period indicated.

Dr. B. has found a very great difference in the susceptibility of patients to the influence of the belladonna, as well as in the strength and purity of the latter. In the use of the article he always commences with a dose of one-quarter of a grain thrice a day, and gradually increases the dose until it is doubled or tripled. In some cases much smaller doses are tolerated than in others. The test with him has been, the occurrence to a slight extent of the constitutional effects of the article—as dryness of throat, a feeling of uneasiness or giddiness of head, or dimness of vision. If any or all of these symptoms appear the belladonna was given twice instead of thrice a day. When the patient was plethoric or of a full habit, of rigid fibre and active circulation, Dr. B. has been in the habit of combining with it small doses of tartarized antimony.

The tabular record of one hundred and forty-seven cases in which a fair opportunity was afforded for testing the effects of belladonna upon the painfulness

and duration of labour, exhibits the number of the pregnancy, the duration respectively of the three stages in each case, the presentation and position of the child, with its size and weight.

So far as this table goes its results would seem, in some degree, to speak favourably of the influence of the belladonna on the duration of the first stage of labour, if it be silent in respect to any power it exercises in diminishing the attendant pain. But, as Dr. B. very correctly remarks, the test of a larger experience and of other careful observers is necessary, in order to determine satisfactorily the prophylactic value of the article.

The second essay—on the use of anæsthetics in midwifery—which was delivered originally before the New York Academy of Medicine, discusses a question to the settlement of which no amount or acuteness of *à priori* reasoning is adequate. The question is simply one of empiricism. If, by experience, it shall be shown that the induction of anæsthesia by any of the agents in use in no degree increases the danger of labour, as respects either mother or child, nor renders either the one or the other liable to any injurious consequences afterwards, we are perfectly warranted in resorting to it—nay, are perhaps required, by the duties we owe to our patients, to resort to it, in order to diminish the sufferings of parturition. The safety of anæsthesia in midwifery being established, we want nothing further save an acquaintance with the rules for its employment, and with the circumstances, if there be any, which should prohibit a resort to it. These are to be acquired, also, from results alone of experience.

The conclusions arrived at by Dr. Barker in respect to the use of anæsthetics in midwifery are given in six general propositions, as follows:—

"1st. Anæsthetic aid is of the greatest value in the obstetric art, and chloroform is generally the preferable agent for this purpose.

"2d. It exerts no injurious effect, when properly administered, upon the health of either mother or child.

"3d. It is perfectly justifiable to use chloroform in natural labour, solely for the purpose of relieving pain.

"4th. It is especially useful in calming the extreme agitation and mental excitement which labour often produces in very nervous women.

"5th. It should be administered in those cases of natural labour, where the progress is suspended or much retarded by the pain occasioned by previous diseases, or such as may supervene during labour, and in those cases where the irregular and partial contractions occasion intense and almost constant pain, but have no effect to advance the labour.

"6th. It is of great service in spasmodic contraction and rigidity of the cervix uteri, in tetanic rigidity of the perineum, in certain forms of puerperal convulsions, and in the various obstetrical operations."

Dr. Barker prefers, in midwifery practice, chloroform to ether. While he considers the former equally safe, its odour to most persons is much more agreeable, whilst it is less persistent; it is less liable to produce the irritation of the bronchi with an annoying cough or choking so often consequent on the first administration of ether. Chloroform, when used for any length of time, does not fill the chamber with a disagreeable and, let it also be remembered, inflammable vapour. The effects of the chloroform are more prompt than those of ether; free, generally, from the preliminary stage of excitement, and allowing the use of the agent for each recurring pain, the patient in the interval being comparatively free from its influence. We can, also, regulate with more certainty the degree of anæsthesia with chloroform than with ether.

It is the duty of each obstetrician carefully to examine the evidence offered to prove the entire safety of anæsthetics during labour, and upon his own convictions and the validity and satisfactory character of that evidence must his conduct in respect to their use or disuse be directed. If he believes in the entire safety of their use both for mother and child, his duty will be, then, to resort to them in cases to which experience has taught us they are adapted. Relief from pain is an important desideratum to the parturient female, and it should be secured to them when it can with propriety be done; and by such agent as has been shown to be the safest, most agreeable, and most easily managed.

D. F. C.

QUARTERLY SUMMARY

OF THE

IMPROVEMENTS AND DISCOVERIES

IN THE

MEDICAL SCIENCES.

ANATOMY AND PHYSIOLOGY.

1. *On the Relation of Respiration to Muscular Action, and on the General Significance of Respiration.*—By Dr. Moritz Traube. The author first shows that the division of food into tissue-forming and respiratory (according to Liebig's hypothesis) is negatived by the fundamental conditions of animal life. It is wrong to suppose that the consumption of material in animals, as expressed in the respiration, suffices merely for heat production. In respect to the whole range of the animal kingdom, including cold-blooded creatures, one may rightly conclude that the most important function of respiration is the maintenance of muscular activity. The experiments of Lavoisier, and of Regnault and Reisel, prove that, with increase of exercise (muscular movement), an increased amount of oxygen is consumed. By a comparison of torpid, half-torpid, and active lizards, this law was strikingly demonstrated. Pathology shows that any deficiency of respiration (*e. g.*, in certain heart diseases) brings with it the incapacity for muscular activity. The question arises: Into what element of the muscle does the oxygen of the blood fix itself? is it diffused in the fluid of muscle? or is it associated with the muscular fibre itself?

As the blood passes through the capillaries, a portion of the oxygen is set free; this passes through the walls of the vessels, and joins the muscular fibre in the form of an unstable chemical combination, which is capable again of giving up its oxygen to another matter, which is present in the fluid of muscles, and which has a stronger affinity for oxygen than the muscular fibre. The latter is again in a condition to take up a fresh portion of oxygen. This theory the author has developed in a previous work.[1] The combinations formed in the fluid of muscles the author seems to regard as a transition product (Zwischenproduckt) towards water and carbonic acid. This transference of oxygen is effected more rapidly at high than at low temperatures, in warm-blooded than in cold-blooded animals. The deoxidation of the muscular fibre goes on most rapidly under the action of the nerves, but in a manner not yet explained. Since an active muscle by its oxygen oxidizes, in a given time, more combustible material, and consequently produces more carbonic acid, than during the conditions of rest, so must the increased amount of carbonic acid derive more oxygen from the arterial blood. In long-continued hard labour so much oxygen may be used that the respiratory apparatus is put into most active exercise. Perfect deoxidation of the muscular fibre corresponds with *post-mortem* rigidity; consequently, we find that heat hastens and cold retards rigidity. Muscular action has the effect of hastening rigidity, whilst the contact of oxygen again dispels

[1] Theorie der Fermentwickungen. Berlin, 1858.

it (Brown-Sequard and Stannius). The experiments of Humboldt, Liebig, and Brown-Sequard, taken collectively, prove that the *post-mortem* rigidity of muscles is produced by the want of free oxygen. According to Traube, the muscular fibre, or rather the fibrinous matter contained in it, is a vital ferment, which transports oxygen from the blood-substances dissolved in the fluid of muscle. From the above theory, the following consequences may be deduced: The muscles in their quiescent state minister to the process of respiration, since they hand over the oxygen of the blood to combustible materials, and reduce the latter—with the formations of heat—to carbonic acid and water. The transitional combustible matters consist, according to Helmholtz, of substances soluble in alcohol; but, according to Du Bois Reymond, of acids. The muscles, then, may be considered as the principal seats of combination and heat-production. The organized part of the muscle is not disturbed in its function. The theory of Liebig, that the albuminous substances, by their chemical changes, are chiefly concerned in supporting muscular activity, is not borne out by the above conclusions, for non-nitrogenous substances may be equally serviceable, and the urea thus furnishes no estimate for the developed muscular force. From experiments of Bischoff and Voit, it results that the destruction of albuminous substances has nothing to do with the muscular action of the animal organism, but it is highly probable that the decomposition of albumen is effected by a ferment in the liver. The bile, from its contained nitrogen and sulphur, unmistakably indicates its origin. Kühne and Hallwachs have proved[1] that the seat for the conversion of non-nitrogenous benzoic acid into nitrogenous hippuric acid is the liver. The experimentum crucis which proves that the albumens do not participate in muscular action is that of Voit, in which, after extreme muscular action, the excretion of urea was shown not to be increased. It has been shown that increased muscular action requires consumption of oxygen, and that a quantity of matter in muscles is consumed. Did this matter consist of the muscular fibre itself, or of the albumen in the fluid of muscle, then, after increased muscular action, we ought to find much urea in the urine, which is not the case. Although the albumens take no part in muscular action, their presence is very important. They alone are capable of forming the various ferments, of sustaining the growth of organs, and of repairing the loss of substance. They are necessary for the maintenance of mucous membranes, bones, epidermis, nails, hair, etc. They are also required for the *organized* parts of muscle. The decomposition of albumen is essential to the formation of bile. In the carnivorous animals it must also serve for heat formation and for muscular activity. But Liebig has introduced an error in dietetics, in estimating the worth of nutriment by the proportion of nitrogen contained in it. The most striking contradiction to this supposition is furnished by the herbivorous animals, many of which are remarkable for their capabilities for prolonged labour.

After some remarks on respiration, Traube sums up the functions of that act under the three following heads: 1. The respiratory process is necessary for cell formation: This is its most general function, because all organized beings, plants as well as animals, require oxygen for the construction of cells; in plants, this is the only use of respiration. 2. Muscular activity: This function is common to warm-blooded as well as to cold-blooded animals; in the latter, muscular activity is the most important object of respiration. 3. Heat production: Although this function requires the greatest consumption of oxygen, yet it is only in warm-blooded animals that it has the signification of a truly vital process.—*Edinburgh Medical Journal*, Nov., 1861, from *Archiv. für Patholog. Anat. und Physiologie.*

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2. *Influence of Water on the Metamorphosis of Matter.*—Dr. FREDERICK MOSLER, of the University of Giessen, has recently instituted a series of experiments on the influence of common drinking-water, taken in various quantities, upon the general metamorphosis of matter in the human body, which have led to important results. The experiments were made on a number of men, women, and children; in one series the food and the general mode of living remained un-

[1] Pharmac Centralbl., 1857, s. 359.

changed; in another, the liquids which had been usually taken, were withdrawn; and in a third, various quantities of common drinking-water were added to the usual consumption of liquids. The water used in these experiments had been carefully analyzed, and was found to contain 2.7 grains of solid constituents, amongst which the carbonate of lime, iron, and magnesia, and chloride of sodium predominated. One grain of carbonic acid was contained in sixteen ounces of water.

The disturbances observed after withdrawing liquid food were very striking, and ensued more rapidly, if the solid food which was taken contained only a trifling quantity of water; in persons in whom the metamorphosis was comparatively more energetical than in others; if exercise was taken, and if in consequence of previous indisposition, there was no great power of resistance to morbid influences. In every case the secretions and excretions were diminished, especially so, the excretion of urine, which, although its specific gravity was considerably increased, nevertheless was found to contain a much smaller amount of solid constituents than the quantity of urine which had been previously discharged. The urea was very much diminished; after that came the chloride of sodium, phosphoric and sulphuric acid. Effete matter was therefore retained in the blood, in consequence of a diminished action of the kidneys; and to this the morbid symptoms, and especially the fever which was observed, were no doubt to be ascribed. The excretion by the skin and the lungs was also much diminished; costiveness, loss of appetite, and a dry tongue were complained of—that is, evidently symptoms owing to a deficiency in the secretion of the mucous membrane of the mouth, the stomach, and the intestines.

If, on the other hand, a larger quantity than usual of water was administered, the metamorphosis was greatly accelerated. The quantity of the urine, of urea, the sulphates, the phosphates and chlorides, and of the feces, was much augmented, while uric acid appeared diminished. As regards age, sex, and constitution, the same quantity of water had a much more considerable and lasting effect in boys and girls than in adult males; if water was administered for a somewhat lengthened period to males of a feeble constitution, the metamorphosis was in them more increased than in very vigorous persons; and febrile symptoms set in which were, in a few instances, of a threatening character. The temperature of the atmosphere and of the water which was taken, had also a certain influence. If the air was warm, and at the same time exercise was taken, the metamorphosis increased more considerably; warm water appeared more effective than cold, and there were also differences according to whether the several quantities of water were drunk at long intervals or in rapid succession.

In cases where the increased appetite was indulged by a more abundant administration of food, the expense of the system was thereby compensated, and the long-continued use of water did not thus make such inroads upon the constitution as was the case if the food was not increased; the weight of the body was also not so much diminished under such circumstances. In some cases the action of the water was chiefly diuretic, in others it was more diaphoretic. As regards the intestines, generally, only a very trifling quantity of water was eliminated by them; but in one boy and two girls a large amount of water taken caused profuse diarrhœa, which was also observed in a few adult males, after the use of the water had been long continued.—*Med. Times and Gaz.*, Nov. 30, 1861.

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3. *Influence of Salts of Lime on Nutrition of Bone.*—M. Alphonse Milne-Edwards has made some experiments on the part taken by the salts of lime in the nutrition of bone. He fed three pigeons with wheat, rice, maize, and decorticated millet; so that the amount of lime supplied was much less than that contained in their common food. Another pigeon was fed in the ordinary way. In three months, the three pigeons had diarrhœa and began to waste; they were killed, as was also the other, which had remained healthy. The bones of the three pigeons artificially fed were much smaller, and weighed one-third less than those of the bird which had had its ordinary food; but the relative proportions of inorganic and of organic matter in them were not changed. The change in diet, then, M. Milne-Edwards observes, did not change the composition but the size of the bones—the removal taking place in all the constituents and not in

the earthy matter alone. This gives support to the idea that the formation of osseous tissue is the result of a chemical combination between the organic matter and the phosphate of lime M. A. Milne-Edwards has also endeavoured to determine whether other inorganic matter, as iron, manganese, and magnesia, can be substituted for lime in bone. It is well known that various mineral substances can be made to enter into the composition of the shell of the egg; but in bone this substitution, M. Milne-Edwards finds, cannot be effected. He explains this difference on the grounds that the phosphates of iron, manganese, and magnesia are not isomorphous with the phospate of lime, and therefore cannot be substituted for it; while in the egg-shell, various isomorphous carbonates may be substituted for that of lime. Moreover, he regards the shell of the egg as in fact an excrementitious substance, and hence as capable of taking up foreign and even injurious matters for the purpose of expulsion.—*Moniteur des Sciences Méd. et Pharm.*, July 2, 1861.

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4. *Researches on the Changes undergone by Cane Sugar in the Intestinal Canal.*—Dr. KŒBNER has investigated this subject, and the following are his conclusions: 1. Cane sugar undergoes no change when left from two to four days, at 104° Fah., in natural gastric juice obtained from a dog. 2. Neither is cane transformed into grape sugar in the living stomach. 3. Lactic acid may, after a time, be detected in a mixture of cane sugar, by means of bile which has been freed from mucus. 4. In the ileum cane is transformed into fruit sugar, at least the presence of the latter can be detected in the ileum by means of the polarizing apparatus. 5. Sugar is largely absorbed by the stomach, duodenum, and small intestines. 6. Cane sugar is partly transformed in the latter into lactic acid and fruit sugar, 7. In dogs and rabbits cane sugar occasionally passes unchanged from the intestines into the portal blood, and this is probably the reason why dogs fed on sugar excrete a smaller quantity of urea. 8. Cane sugar, even when eaten in quantity (by dogs), does not reappear in the urine; but, after a saccharine diet, the amount of uric acid appears to be increased.—*N. Syd. Soc. Year Book*, 1860.

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5. *On the Formation of Sugar and Amyloid Substance in the Animal Economy.*—Dr. R. MCDONNELL puts the question—Is the liver endowed with the power of converting amyloid substance into sugar during life, and health? In order to elucidate this question, he withdrew, by means of a catheter, blood from the right side of the heart in the living animal, and the results were—

1st. In twelve experiments made on dogs, for some weeks before fed exclusively on meat, traces of sugar were found in the blood in five; there was no sugar found in the blood of the remaining seven.

2d. In four rabbits, fed on boiled eggs, meat, and butter, for some days, no sugar was detected in the blood drawn from the right side of the heart.

3d. In three dogs, fed on mixed diet, and three rabbits, fed on carrots, potatoes, &c., sugar was found in the blood of the right side of the heart, and in equal quantity in blood from the carotid.

4th. In three rabbits, fed on vegetables, sugar was found in the blood withdrawn during life from the right side of the heart; but double, and in one instance more than treble, the amount was found in the blood removed from the same locality after the animals were killed.

Hence, says McDonnell, one seems in some degree justified in concluding that in vegetable-eating animals the blood is normally saccharine; but that the liver does not form and pour out into the blood of the hepatic vessels sugar specially derived from the transformation of the amyloid substance.—*Ibid.*, from *Dublin Hosp. Gaz.*, May 15.

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6. *Sucking Apparatus of Infants.*—Some time ago, Messrs. CHARLES ROBIN and MAGITOT brought the results of their researches on the mucous membrane of the gums in the fœtus and newly-born infants, before the Société de Biologie; and the following are a few of the most important particulars regarding the sucking apparatus of infants: On the dental cartilage of both jaws there exists, in the region of the canine teeth, a membranous protuberance, which is most

conspicuous in the lower jaw, and sometimes entirely wanting in the upper. This prominence, which disappears three or four months after birth, shows the following peculiarities: It has a slight impression in the centre, and on microscopic examination, two or three papillar prominences may be distinguished, which are very vascular, and thereby capable of erection. The protuberance on the right side of the lower jaw is generally connected with that on the left, by a membranous seam, which is also furnished with papillæ, and very vascular. The edge of the lower jaw, therefore, possesses, as it were, a thin and small lip, extending from one canine tooth to the other, and evidently serving the purpose of sucking.

In some individuals this membranous fold is very thick, but it is always movable forwards as well as backwards. In such instances the prominences are replaced by the ends of the fold itself being larger; so that it resembles a soft and almost œdematous tubercle of oval form. Similar tubercles, only less broad and prominent, exist on the upper jaw. If the surface of the membranous fold is closely examined, it appears to be slightly wrinkled: which is due to the rather voluminous papillæ with which it is furnished; these are rounded above, and covered by a delicate layer of epithelium cells, like the rest of the gums; through which the top of the papillæ are distinctly visible. The reddish colour of this membrane may be easily distinguished from the whitish appearance of the fibrous tissue in the mucous membrane of the gums, which is covered by it; and where it passed into the gums, wrinkles are no longer visible. The prominences described above are sometimes wanting, but the membrane itself is always present; and ends either at the canine teeth, or a little beyond them.—*Med. Times and Gazette*, Nov. 30, 1861.

MATERIA MEDICA AND PHARMACY.

7. *Physiological Action of Aniline.* By Dr. Jas. Turnbull, of Liverpool. —As we know that the alkaloids and their salts are almost identical in their effects, we can scarcely doubt that the physiological action of aniline and that of the sulphate are the same, or very nearly so. Gmelin states that half a gramme of aniline introduced, together with a gramme and a half of water, into the stomach of a rabbit, caused strong clonic cramps, then laborious breathing, loss of strength, dilated pupils, and inflammation of the mucous membrane of the mouth.

Dr. Schuchardt[1] arrived at the following results from a series of experiments: Aniline may act injuriously on the animal organism, and in large doses may even cause death. Frogs introduced into a weak solution containing aniline died in periods varying from a quarter of an hour to two hours and a half, and death was also caused by the introduction of aniline into the mouth or into a wound in the back. Rabbits were also poisoned by this substance, a small animal being killed by fifty drops in six hours and a quarter, and a larger one by a hundred drops in four hours. In all the animals experimented upon, violent clonic and tonic spasms ensued after the application of the aniline, and continued almost uninterruptedly till death. There was also loss of sensibility, commencing at the lower extremities and extending to the upper; the temperature of the body was also reduced. Wherever the aniline was applied locally, as in a wound of the back, on the stomach, on the posterior part of the tongue, or on the conjunctiva, appearances of irritation were observed, which are probably connected with the power possessed by aniline of coagulating albumen. The aniline was never detected in the urine, and it is probable that this substance is eliminated from the body rather by the organs of respiration than by the kidneys.

I gave to a dog about three months old half a drachm of the sulphate of aniline, and the effects produced corresponded in many respects with those observed

[1] British and Foreign Medico-Chirurgical Review, July, 1861, p. 247.

by Dr. Schuchardt. About two hours and a half after it was given, the animal vomited, and an hour later it was purged. It became dull, weak, and tremulous; the pulse became very rapid; the pulsations of the heart were counted 148 in a minute, and the breathing was somewhat laboured. The feet were cold, the tongue of a blue colour, and the hind legs almost paralyzed. Five hours after, it was very weak, but recovering, and the next day it had recovered appetite and liveliness.

The sulphate of aniline does not seem to have the same local irritating effect that the aniline itself produces. My own observation would lead me to believe that it has a direct action on the nervous system. The most striking effect, however, which it produces is the visible alteration in the colour of the lips and complexion. A peculiar blueness of the lips, the tongue, and the nails, and a dusky appearance of the complexion, have been observed in a greater or less degree in most of the cases where a sufficient dose has been taken continuously for any considerable time. It is a temporary effect which has always gone off within twenty-four hours when the remedy has been omitted. In one case, where an overdose of not more than three or four grains was taken, the blueness in the hands extended above the wrists. There has been some depression and headache in some of these cases, which symptoms have, however, gone off when the medicine has been discontinued. The blue appearance, though like that which occurs in chronic bronchitis, does not seem to arise from any interference with the respiratory function. This change of colour is more interesting from the fact, that we have few examples of parallel effects resulting from the exhibition of medicinal agents. The permanent discoloration of the skin which sometimes arises from the long-continued exhibition of nitrate of silver is scarcely a parallel case, for here the oxide of silver is deposited in the skin from the remedy being decomposed by the action of the light; whereas the blueness from the sulphate of aniline appears to arise from a colouring matter being formed in the blood, which is most visible in parts like the lips, where there is a thin mucous covering. The effect of madder-root (which is used as a dye) in colouring the bones of animals fed upon it of a red colour is more nearly a parallel case; but the effect of the carbazotic acid and its salts—which are of a deep yellow colour, and produce a similar colour of the skin, as if the individual were artificially jaundiced—is the example which most nearly resembles that of the colouring influence of sulphate of aniline. This power which carbazotic acid has of colouring yellow, not only the tissues but also the fluids of the body, was discovered by my friend, Dr. Moffat; and it is worthy of observation that both aniline and carbazotic acid are derivatives from the radicle phenyle.

If the blue colour produced by sulphate of aniline does not arise from any interference with respiration, we have to inquire from what other cause it may arise. I believe it is from the sulphate of aniline being oxidized in the blood, and producing in it a blue dye. Gmelin states a fact which seems to prove this —namely, that when aqueous sulphate of aniline is boiled with peroxide of lead, an oxidizing agent, carbolic acid, is evolved, and a blue liquid produced which smells of formic acid and afterwards becomes colourless, and gives off ammonia when heated with potass. Aniline, it has also been stated, is a derivative from indigo; and it has relations to many other dyes, the mauve-dye being made from the sulphate of aniline by oxidizing it with bichromate of potass. It is, therefore, probable that the temporary blueness arises from a colouring matter, or dye, being formed from oxidation of the aniline in the blood.—*Lancet*, Nov. 16, 1861.

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8. *Physiological Effects of Opium.*—Dr. G. BODINGTON believes that the possibility of giving large doses of opium in cases of delirium tremens, not only with impunity, but even with advantage, arises from the circumstance that alcohol has to a certain extent the power of controlling the physiological effects of opium. Hence it is that, when the system is, so to speak, saturated with alcohol, opium becomes comparatively innocuous. The author further states that the use of opium should be specially guided by the previous habits of the patient, and that the modern salts of the drug seem to be the most dangerous form in which it can be given. "The native opium contains constituent ingredients of a contrary character, which are counteractive of each other. Laudanum, hold-

ing all these in solution, is the safest form, inasmuch as the alcohol, the solvent, in some measure acts as an antidote."—*British Med. Journ.*, June 9.

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9. *Triticum Repens in Irritable Conditions of the Bladder.*—Henry Thompson, Esq., highly extols an infusion of *Triticum repens* in irritable conditions of the bladder. The form he has adopted for administering the remedy is as follows:—

"One ounce of the dried and cut stem is infused in a pint of boiling water for an hour. The liquor removed by straining has been given, unmixed with any other remedy, in quantities varying from twelve ounces to a pint during the twenty-four hours, in several doses. The taste of the infusion is rather agreeable than otherwise; it produces no nausea or derangement of the stomach.

"From notes of the numerous cases in which I have employed it, making at the same time due allowance for the effect of other sources of benefit to the patient, I have arrived at the following conclusions respecting the indications for its use:—

"In vesical irritability produced by inflammation of the prostate and neck of the bladder; in severe gonorrhœa, and especially when the inflammation extends backwards; in the pain and spasm caused by calculus, and by aggravated stricture of the urethra, as well as in some cases of obscure disease of the bladder, the good effects of the infusion have been very marked, and it has proved far more efficacious than the buchu, which may fairly be esteemed the most widely applicable and generally useful of our officinal remedies of this class in such circumstances. In cases of prostatic enlargement in elderly patients it has been of service, but less frequently than in the conditions above named. It has also afforded great relief in renal calculus. A medical man practising in London, who has thus suffered, and very severely, during many years, tells me that 'after trying every approved remedy, it is the only thing that has rendered life endurable.' This is one of four similar cases in which it has been more or less useful.

"In short, wherever micturition is very frequent or painful, depending on hyper-sensibility of any part of the urinary passages from acute or subacute inflammation, with signs of its presence in the urine itself, the symptoms are mostly materially relieved, and the urine becomes clearer. If improvement is produced at all, it is generally very soon after commencing the medicine, and if none can be observed in four or five days, it is not worth continuing to employ it.

"I believe it is important that the plant should be gathered in the spring shortly before the leaves appear; the stem is then to be slowly dried without artificial heat, and cut into short lengths for use. The infusion obtained from material so treated is superior to that made from plants gathered indiscriminately at any time, and, also, to the infusion made from the *Triticum repens* which is imported by the herbalists for the purposes of French pharmacy in this country."

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10. *The Uses of Phenic Acid.*—A paper was read at the meeting of the Academy of Sciences, on March 4th, by M. Lemaire, who ascribed extraordinary properties to this acid, which is one of the results of the volatile distillation of coal-tar. He stated that anatomical specimens and entire animals might be preserved, in a fresh condition, in vessels smeared over on the inner surface with phenic acid, provided that the vessels are hermetically sealed so as to prevent the removal of the air contained in them. The bodies of animals injected with phenic acid, dissolved in water, may be kept without any alteration by the contact of atmospheric air. In this manner, the body of a man might be preserved at a very trifling expense. An aqueous solution, containing one part of phenic acid and forty parts of acetic acid in a hundred, will, according to M. Lemaire, cure tinea in thirty or forty days, and scabies almost immediately. In the treatment of tinea, a compress soaked in this preparation should be applied once daily. In scabies, a single application will suffice for the destruction of the parasites which keep up the affection. The acetic acid is added to the solution for the purpose of enabling it to penetrate beneath the epidermis down to the roots of the hair.—*British Medical Journal*, August 10, 1861.

11. *Administration of Cod-Liver Oil and Iron.*—M. JANOTA describes a method of administering iron in combination with cod-liver oil. The iron is combined with the oleic acid of the oil. Seven drachms of carbonate of soda are dissolved in eight ounces of distilled water; the solution is filtered, and to it is added a solution of seven drachms and a half of sulphate of iron in eight ounces of distilled water. The precipitated carbonate of iron is washed, and to it is added four times its weight of oleic acid; and the mixture is heated to gentle boiling. When a large portion of the water is evaporated, and the mass has acquired a black colour, with evolution of carbonic acid, the oleate of iron thus formed is shaken in a bottle with sixteen ounces of cod-liver oil, set aside for a short time in order that all the water may be separated, and filtered through white paper. The preparation has a beautiful red colour, and in smell and taste differs little from ordinary cod-liver oil. It must be kept in well-stoppered bottles.—*Brit. Med. Journ.*, Oct. 12, 1861, from *Œsterr. Zeitschr. für Pharm.*, 1861.

12. *Medicinal Extracts.*—At a meeting of the Pharmaceutical Society held on the 6th Nov., the President, Mr. Squire, read a Paper on "Medicinal Extracts, taking extract of belladonna as an example."

The object of the paper was to point out that the process for the preparation of the so-called "green extracts," given in the London Pharmacopœias from 1809 to 1851, was never followed by the manufacturers of those extracts on a large scale; and, further, that the plan which is adopted by the manufacturers is decidedly the better. Mr. Squire tested the different processes with some belladonna. The plant arrived at maturity in September this year, and was then cut, and immediately used. From this plant three extracts were made, one from the leaves only, as directed in the Pharmacopœia, another from all the soft parts (the plan adopted by the manufacturers), and a third from all the soft parts, except the leaves. The first became mouldy in ten days. Both the others were good extracts, which kept well. To test the effects of the extracts, Mr. Squire placed specimens in the hands of some eminent ophthalmic surgeons—Mr. Wordsworth, Mr. White Cooper, Mr. Dixon, and others—for trial, and they all reported that the extract made from the soft parts without the leaves acted most powerfully and rapidly in dilating the pupil of the eye. Mr. Squire concludes, therefore, that the most active and best keeping extract is made from the whole of the soft parts of the plant—a fact which applies to extract of henbane and other green extracts as well as belladonna. Another reason for adopting the manufacturers' plan was, that when the pharmacopœia process was followed, there was a loss of one-third of the useful constituents of a plant.—*Med. Times and Gaz.*, Nov. 30, 1861.

MEDICAL PATHOLOGY AND THERAPEUTICS, AND PRACTICAL MEDICINE.

13. *Treatment of Delirium Tremens by Large Doses of Tincture of Digitalis.*—Dr. F. E. CAREY relates (*Med. Times and Gazette*, August 24, 1861) four cases of delirium tremens successfully treated by large doses of tincture of digitalis.

Case 1. P. B., aged 42, carpenter, was admitted into the Hospital February 26, 1861, with well-defined indications of delirium tremens. I was requested to visit him the previous day at his own house, and found him labouring under all the hallucinations of the disease consequent on a protracted debauch of some weeks, which had depressed and enervated a naturally feeble system. For nearly three weeks he had been unable to procure any refreshing sleep. During this day, I prescribed four grains of solid opium and ʒj of tinct. opii, which produced the inverse effect of aggravating the cerebral excitement. The evening of the day of his admission, I administered a half-ounce dose of tinct. digitalis, with an equal quantity of gin, which, after the lapse of half an hour, caused him to

fall into a deep sleep, which continued with one brief intermission for twelve hours. He awoke quite rational, and two days subsequently was presented cured. The digitalis did not produce its alleged results, diarrhœa and vomiting, nor were the kidneys stimulated to increased action.

Case 2. R. C., aged 30, after a prolonged course of dissipation, was seized with unmistakable symptoms of delirium tremens. On his removal to the hospital, which was necessitated by his extreme violence, eighty drops of laudanum were given. At eight o'clock, P. M., as there was no mitigation of the delirium, an additional dose of forty drops was ordered. The night was spent in wandering and in attempts to escape from restraint. The following morning, after a copious evacuation, he was ordered a combination of laudanum (forty drops), and antimony, which was repeated after four hours. He had then taken the equivalent of at least ten grains of opium in twenty-four hours. In the evening, as no amelioration had taken place, the half-ounce dose of digitalis was administered, with an equal quantity of gin. His condition throughout the night was calmer, and for four hours he enjoyed undisturbed sleep. No further treatment was deemed necessary, notwithstanding that he continued somewhat disposed to be boisterous during the next twenty-four hours. A subsidence of this soon took place, and he was dismissed cured at the end of the fifth day from his admission.

Case 3. A third case occurred in a gentleman, aged 28, whose nervous system had also been subjected to the effects of prolonged alcoholic drinking. Opium was equally generously administered, but, as in the preceding cases, its inefficiency was most manifest. Recourse was had to the digitalis with such good results, as to tranquillize our patient, who had been afflicted with the most soul-torturing delusions it has yet been my lot to witness.

Case 4. The fourth case has occurred within the last few days in a man, aged 25. He is the subject of epilepsy, induced by his habits. His appearance betokened serious disease of the heart, confirmed by auscultation, which detected an aortic systolic murmur, with extensive hypertrophy. This patient's daily consumption of raw spirit was not much below two to three pints. Aberration of mind quite characteristic. Opium was again resorted to, but its shortcomings were as evident as in the other cases. Half an ounce of digitalis was given in the morning. Notwithstanding my remonstrances, the patient left his room and wandered about the house, much quieted, however, till he retired to bed at his usual hour. Next morning, I found him calm and composed, having had a few hours' sleep. The immediate effect of the digitalis here, was to equalize the circulation, and to restore warmth to the extremities, chilled by his morning's walk.

This latter case is interesting, as indicative of the non-injurious effects of wholesale doses of digitalis in cases where morbus cordis exists. This condition of the heart, though not to the same extent, was detected in the preceding case. In any of these cases, should the first dose of the digitalis not have sufficed, I would not have scrupled administering a second, as the influence on the pulse was not such as to offer any barrier to its repetition.

In the same Journal for September 14th, Dr. D. M. Williams reports the following case:—

"At noon of Wednesday, August 28, I was requested to see a private patient, whom I have cured of delirium tremens on two previous occasions by a single subcutaneous injection of two-thirds of a grain of sulphate of morphia, dissolved in ♏xx of water. Since the last attack he had been perfectly sober, until August 13, when he began to drink, but continued to eat as usual until the 20th, from which time he drank brandy, and continued doing so up to the day I saw him. He became delirious on the 26th, and slept none during that or the following night, nor had he eaten food since the 20th.

"When I saw him he was perfectly furious, almost naked, and struggling to get out of the house; with difficulty I ascertained that the pulse was 108. 2 P. M. Administered tinct. digitalis ℥ss, and persuaded him into bed. In twenty minutes the pulse had fallen to 96, full and soft; tongue loaded. He was still very much excited, and I thought the lowering of the pulse was due to position and soothing conversation. To have another ℥ss tinct. digit. at 4 o'clock. 5 P. M. An hour has elapsed since he took the second dose of the tincture; he has been ex-

tremely wild and restless, excepting once, when he seemed to fall into a quiet doze for a few minutes, but awoke as mad as ever. Pulse 96, full, soft, and regular; skin cool, but as he is almost naked, and cannot be induced to lie in bed covered, that is easily accounted for. To have another ʒss tinct. digit. at 7 o'clock. At 10.30 P. M. had become more manageable, and has been quieter since 6 o'clock; pulse 96, but wiry, with an uncertainty about an occasional beat; has slight nausea, will take no food, but wants beer continually; to have a little brandy and lemonade during the night, and as much beef-tea as he can be induced to take.

"*August* 29. 10.30 A. M. Has had a bad night, has not slept more than an hour and a-half since he took the first dose, but has been vomiting and purging very much all night, with violent palpitation of the heart between 6 and 10 o'clock this morning. He attempted to take beef-tea, also brandy and lemonade, but vomited everything; he is, however, quite quiet, talks rationally, and complains much of the palpitation. Pulse 86, full, soft, and steady; skin comfortably warm and moist, tongue cleaner; to take ʒss every three hours of the following mixture, and as much food as possible: ℞. Bismuth subcarb. ℈ij; sol. morph. ʒj; æther chlor. ʒiss; mucilage Arab. ʒss; aquæ ad ʒviij. M. 10 P. M. Has spent the day at Eastham, where he took six and a-half glasses of brandy, but no food or medicine. Has had no vomiting or purging since morning; kidneys have acted throughout as usual. He is now quite quiet, but provokingly obstinate, and craving more brandy; pulse 96. All stimulants forbidden; to take his mixture and as much milk, beef-tea, etc., as possible during the night.

"30*th*. He is so much better of his delirium that his friends allowed him to go to Seaforth alone, as he complained of being ill, and thought a little change would enable him to return to business quicker. His wife says he has had a good night, and she thinks he slept a good deal; has had no stimulants, but drank a large quantity of milk, and from this time steadily recovered."

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14. *Treatment of Intermittent Fevers by Disulphate of Cinchonia.*—Dr. JAMES KIRKPATRICK relates (*Madras Quarterly Journal of Medical Science*, July, 1861) twelve cases of intermittent fever, with a view of corroborating the growing opinion that in the disulphate of cinchonia we have a remedy second only, if not nearly equal in efficacy, to the disulphate of quinia, in periodic fevers. "Some of the earlier experiments," he observes, "in the use of the disulphate of cinchonia threw discredit on its value, and, consequently, in comparison with the similar salt of quinine, it has scarcely been used. Of late years, however, many practitioners in several parts of the world have borne testimony to its good effects in the treatment of intermittents, and the object of this paper is to add thereto. Besides the twelve cases now given, which are not specially selected on account of success, but merely a few of the ordinary cases of intermittent fever treated in the Pittah Civil Hospital at Bangalore, I have used the cinchonia in a considerable number of others, and the impression on my mind of its great value as an antiperiodic is very decided. It appears to me to be nearly, though perhaps not quite, equal to quinine in certainty, and the dose of it required to cure a fever to be nearly the same; the larger doses, however, of fifteen, twenty, or thirty grains, cannot be so advantageously given, as the cinchonia seems more apt to occasion nausea or vomiting than quinia. But it must be stated that in some cases the cinchonia decidedly failed, and quinia subsequently effected a cure. To add to my own testimony, I may mention that Dr. Oswald, in reporting upon the Shemogah Hospitals for 1860, says: 'I find the cinchoniæ disulphas very nearly, if not quite, as efficacious as quinia.' Though the cinchonia is thus so efficacious singly, it seems probable that the salts of the two principal alkaloids from the cinchona barks may be even more advantageously used in combination. A proportion which has been recommended is two parts of quinia to one part of cinchonia; but equal proportions seem to have acted perfectly satisfactorily in several cases. Resort to the use of the disulphate of cinchonia is, of course, prompted only by economical motives; for, as to safety and certainty of cure, quinia is worthy the universal confidence placed in it; but its importance in this respect, considering its efficacy, may be very great, if its production in quantity can be carried on at present prices."

15. *Arsenic in Ague.*—M. Sistach, physician to the military hospital of Vincennes, has recently made a number of trials with arsenic in ague, and has come to the following results concerning the value of this treatment:—

Arsenic is a powerful febrifuge in recent cases as well as in such of long standing, and which are continually kept up by a paludal cachexy. It acts more rapidly in tertian than in quotidian fever, and it has an evident influence upon tumours of the spleen. Its effect is, however, dependent upon the pharmaceutical quality of the preparation, and upon the dose of the remedy. To be innocuous, the entire dose of the arsenical preparation to be given must be divided in a peculiar manner; due regard must be had to the constitution of the patient, and the dose must be diminished as soon as the paroxysm is suppressed.

M. Sistach has treated 150 cases of ague with arsenic, of which 53 were cases of quotidian, 94 of tertian, and 3 of double tertian fever: 50 of them were quite recent, 100 of long standing. Some of the patients had made the late campaign in Italy. The results of the treatment were as follows: 86 patients had no further paroxysm after the first dose, 73 had one, 25 two, and 6 three more paroxysms. There were 22 relapses, of which 9 belonged to the tertian, and 13 to the quotidian type, 8 being of recent date, and 14 of long standing.

As to the form in which arsenic should be administered, M. Sistach recommends to use it in solution, because thereby the absorption and division is facilitated, and he prefers M. Boudin's solution to all others. This is prepared in the following manner: One gramme (about 16 grains) of white arsenic is boiled with one litre of distilled water in a porcelain saucepan until the arsenic is entirely dissolved; the solution is then allowed to cool, is percolated, and the loss of water by evaporation is compensated by a fresh addition of distilled water to it; the whole is then well mixed with one litre of white wine. This liquor arsenicalis Boudini contains five centigrammes of arsenious acid in 100 grammes of fluid (1 part of arsenic to 2000 parts of liquid). Of this preparation, 60 grammes (2 ounces) are at first given per diem, and as soon as the paroxysm is suppressed, only 30 or 40 grammes should be given per diem, and the treatment be concluded with 20 grammes per diem. These total doses have to be divided into 4 parts, the first of which is taken at 6 A. M., the second at 8 A. M., the third at 2 P. M., and the last at 8 P. M. If thus administered, the remedy causes neither vomiting, colics, nor diarrhœa, nor does it exert any influence on the pulse and the temperature of the body. M. Sistach has observed that, as long as the fever was not quite gone, the remedy agrees very well with the patient at any hour, provided the dose be sufficiently small, and the appetite may even increase under its influence; but if the fever is suppressed, the smallest dose will disturb the appetite if taken immediately before a meal, and will excite vomiting if taken directly after a meal. In every case the treatment was commenced with an emetic if the stomach was out of order, and if, when the treatment had been concluded, the appetite did not return, the same was done, after which a generous diet could be allowed.—*Med. Times and Gaz.*, Oct. 5, 1861.

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16. *Arsenious Acid in Large Doses as a Substitute for Quinia in Intermittent and Remittent Fevers.*—Mr. J. Turner highly extols (*Med. Times and Gaz.*, Sept. 28, 1861) arsenious acid in large doses as a substitute for quinia. He states that after twenty years experience with that remedy he has come to the conclusion that arsenious acid possesses as great or even greater specific influence over intermittent and remittent fevers so prevalent in and fatal to the British armies in the east, than quinia; and he asserts that its exhibition in the large doses requisite is not attended with greater risk or danger to the patient, nor is a greater amount of caution necessary than its more costly remedy, for he has given ♏xx of the liq. potassæ arsenitis within ten hours, repeating the same amount the following day with success in a case of obstinate quotidian intermittent to an infant of nine months old without the slightest gastric or other irritation supervening.

Mr. Turner first employed the Fowler's solution in large doses when in medical charge of the East India Company's Steam Frigate Nemesis in China, in the Yellow River, and when lying off the city of Nankin, in the years 1841, '42. He subsequently employed it in Sindh, a country notorious for the virulence of its

fevers, in the years 1851, '52, and 53, and with favourable results, as the following extracts from his hospital records will show:—

"No. 1 (1851).—Some cases of fevers (hepatic) have been treated, after relieving stomach and bowels, with liq. potassæ arsenitis, which I find in these complicated affections *preferable* to quinine.

"No. 2 (1852).—I have given a fair trial to quinine in ℈j doses, and also, with an equally successful issue, to liq. potassæ arsenitis. Have found the tertain type less easy to manage than the quotidian. ℈j, sometimes followed by gr. x doses when fevers are intense, is more effective and less extravagant than the more frequent finikin doses: and which latter mode of treatment in India not unfrequently leads to the transport of the patient to some distant sanatorium, and for the reason—'He can't shake off the fever.'

"No. 3 (1852).—The fever cases have been treated chiefly with ♏xxv doses of liq. potassæ arsenitis, neither gastric nor other irritation supervening. I consider this remedy an excellent substitute for the more costly quinine.

"No. 4 (1852).—During the months of November and December, consequent on the entire expenditure of the arsenical solution, I have treated fever cases with a ℈j dose of quinine; but for the month of January, 1853, liq. potassæ arsenitis has been employed almost to the exclusion of quinine, and with very satisfactory results, both in the European Horse Artillery and Native Artillery Hospitals.

"On my recall from Sindh to Poona, in 1853, to assume the more responsible charge of the Headquarters Horse Brigade of Artillery, the following minute I find subscribed to my report for the year 1859: 'I would not again have recourse to the large doses of quinine in fevers till satisfied of the inefficacy of the liq. potassæ arsenitis in even larger doses than the ʒss every second hour to four or five, or even six.' Subsequently, and till my departure on furlough in March last, I rarely prescribed quinine."

"The largest quantity of the arsenical solution," Mr. J. T. says, "he has ever given, and longest continuance of administration, was an equivalent to gr. xix of arsenious acid in twenty-eight days. The subject of this treatment was a strongly-built, full-blooded recruit, about twenty-two years old, and only a few months in India, who had suffered some days previously, when on the line of march, and very shortly after admission became typhoid. When the case of this man was brought to the notice of the Superintending Surgeon, Dr. Stovell, during his visit, he was taking ʒiij of the solution during an interval of ten hours, and I intimated my intention to increase the quantity, but was reminded by this officer that the case was one 'calling loudly for quinine,' yet my patient took not a grain.

"In the above instance not the slightest gastric or intestinal irritation was present throughout, the man having been watched by my apothecary and attendants day and night. The following is the form of prescription I have usually adopted: ℞—Liq. potassæ arsenitis, tinct. cardam. comp. ää ʒss; mucilag. g. acaciæ ʒiij; mist. camph. ℥ss.—M.; to be given every second hour to four or five times, the last to anticipate the expected paroxysm at least two hours—the plan experience had taught me in administering quinine. When giving Fowler's solution I recommend, as much as possible, a resistance to taking more fluids than absolutely necessary immediately after."

Mr. Turner asserts that the arsenical solution has equally tonic powers in neuralgia.

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17. *Utility of Alcoholic Liquids in the Treatment of Intermittent Fever.*—M. HERARD has lately employed, with great success, *rum*, in the treatment of two cases of intermittent fever in the Hôtel Dieu, after the plan recommended by M. Jules Guyot.

The first of these patients was a woman, æt. 28, who had long inhabited a notorious ague district, and had experienced aguish symptoms, which, two or three months previous to her admission to the hospital, assumed the type of a genuine tertian intermittent. At the time that she entered the hospital, she presented the peculiar cachectic aspect of ague; her spleen was hypertrophied,

so as to extend three or four fingers' breadth beyond the border of the false ribs. She suffered from great depression, loss of appetite, headache, &c.

During the first week of her residence in the hospital, nothing was done in the way of treatment beyond the administration of an emetic. The ague showed no signs of decreasing. The next time that the shivering commenced, a *petit-verre* of rum was administered, the patient being kept in ignorance of the nature of the remedy; and, although totally unaccustomed to the use of alcoholic drinks, she expressed herself as feeling greatly comforted, and the cold fit was very much shortened. On the following day, the general sense of *malaise* seemed very much relieved, and the ague fits never returned. The cachectic complexion became soon exchanged for that of health, and the spleen resumed its natural size, though these effects, latterly, were doubtless aided by the administration of steel and a little quinine, to which remedies, however, it was evident that the amendment was not *principally* due. One single dose of the alcoholic drink, without any assistance from other remedies, seems to have stopped the ague fits once for all.

In the other case, that of a young man, æt. 25, the subject of former repeated attacks of ague, which, at the time of his admission to the Hôtel Dieu, had assumed the type of a very severe tertian, the cure was not quite accomplished by the first dose; but, on the second use of the rum, the ague fits entirely ceased, and have not returned.

M. Herard, in some clinical remarks, expressed his reliance on the treatment recommended by M. Guyot, and carried out in the above cases. In justification of this confidence, he cited, not only the authority of M. Guyot, but the experience of the inhabitants of Algeria, and of certain parts of South America, where ague is endemic, as also of the labourers employed in making the central railway of France, which traverses a district perpetually haunted by the marsh poison. These latter have learned by experience that, during the state of partial vinous intoxication, which they are apt to get into on *pay days*, they may commit with impunity obvious excesses which at other times would inevitably induce an attack of ague.—*Gazette des Hôpitaux*, July 27, 1861.

18. *Chloroform in Intermittent Fever.*—In 1857, MM. Poblacion and Maestre, two Spanish physicians, strongly recommended the internal use of chloroform in intermittent fever. M. Ramon Alienza has also tried this remedy, and gives the results of his experience in the *Siglo Medico*. He has given chloroform in 160 patients, aged from 6 years upwards, of both sexes, and of various temperaments; but especially in nervous subjects who had had one or more attacks of ague of a quotidian, tertian, quartan, or double type. An emetic or a cathartic was first given; then, from the commencement of the paroxysm, the patients took, every two hours, a spoonful of a mixture of two scruples of chloroform in nearly two ounces of water, to which half an ounce of poppy syrup was sometimes added. The general results obtained were the following: The first dose was at once followed by a sensation of warmth in the stomach and a diminution of the more distressing symptoms. The comfort produced was increased with each dose; until at last, in most of the patients, the paroxysm was reduced to one-half or one-third of its former duration. Previously, M. Alienza had often been obliged to remain a simple witness of the painful symptoms—articular, cerebral, gastric, etc.—without being able to calm them by the use of remedies, whether antispasmodic, narcotic, derivative, or antiphlogistic; but under chloroform all these were calmed. M. Alienza does not imagine that chloroform cures intermittent fever; and he has not been so fortunate as to definitely cut short the paroxysms by its use, as MM. Poblacion and Maestre say they have done. M. Alienza has had only fifteen cases of recovery without the use of any other remedy, although he persisted in the chloroform, and took every precaution for the preservation of the medicine. The benefits that he finds to arise from chloroform are, diminution in the intensity of the paroxysms; increased readiness in the disease to yield to quinine, even in smaller doses than had been given before the chloroform was used; and diminished frequency of relapses. No accidents have attended the use of the chloroform.—*Brit. Med. Journ.*, Sept. 28, from *L'Union Médicale*, May 28, 1861.

19. *Therapeutic Action of Sesquicarbonate of Ammonia in Scarlet Fever.*—Dr. JOHN MCNAB states (*Edinb. Med. Journ.*, Oct. 1861) that in the spring of 1859 an epidemic of scarlet fever broke out in his neighbourhood (Bunessan, Oban). Most of the cases were of the anginose variety, though there were several cases of the simplex and maligna. "Shortly after its appearance," he says, "I was casually led to use the sesquicarbonate of ammonia as a gargle for the throat, and forthwith became deeply impressed with its beneficial effects. This led me to employ it internally, and to observe minutely the effects produced. The result of these trials and observations tended more and more to confirm and verify my first impressions. I continued to prescribe it with the greatest advantage to those who became subsequently affected, as long as any trace of the disease remained in the district. When given as a gargle, it was employed in the proportion of two drachms of the salt to six ounces of water—the throat to be gargled with the mixture every four hours. When ordered internally it was prescribed in five or ten-grain doses, according to the age and strength of the patient, and given three times a day. This system of treatment, combined with the general therapeutical indications, was as a general rule attended with marked relief, particularly if the patient was of age sufficient to become impressed with the necessity of using the gargle, and provided the disease had not already involved the throat to such an extent as to interfere with deglutition, and produce organic change and disorganization.

"The specific therapeutical effects of sesquicarbonate of ammonia in scarlet fever seem to depend upon its direct influence on the special blood-poison, from the presence of which in the system the disease arises; for, as scarlet fever is essentially the effect of a specific contagion on the system, and as the sesquicarbonate of ammonia changes or modifies the action of that blood-poison, so there is every reason to believe that the remedy acts specifically, by neutralizing the so-called materies morbi. But apart from any specific influence it exerts, it seems to be of essential service in the treatment of the disease, in consequence of its diaphoretic and sudorific properties, and from the circumstance that it is a prompt and diffusible stimulant, especially of the nervous system, while it possesses the advantage of not accelerating the circulation. Anasarca, which is the most common and the most formidable of the sequelæ of scarlet fever, is not so frequently experienced in those cases where the sesquicarbonate is administered in the early stages of the disease, as where it has not been given at all, or given only when the disease has reached its acmé. This favourable result is probably due to the diaphoretic action of the remedy, which, when freely administered, relieves the kidneys of the undue action they would have to perform in eliminating the blood-poison through the urine."

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20. *Iodide of Potassium in Tuberculous Meningitis.*—Dr. BOURROUSSE DE LAFFORE relates in the *Moniteur des Sciences Médicales*, eight cases of tuberculous meningitis in which he used iodide of potassium with success. The dose is about four and a half grains of iodide of potassium, given every three, four, or five hours, in a little sugar and water. From fifteen to forty grains of the iodide may thus be taken in twenty-four hours. Dr. Bourrousse de Laffore prefers to add sugar when the medicine is given, as, if it be added to the mixture when it is prepared, decomposition is liable to ensue. He expects great results from this treatment.

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21. *Treatment of Chorea by Sulphate of Aniline.*—Dr. JAS. TURNBULL, of Liverpool, states (*Lancet*, Nov. 16, 1861) that he has given the sulphate of aniline in many cases of nervous and convulsive disorder, and has found that it produces some very peculiar as well as useful effects. He has used it in chorea with very good effect.

"Two circumstances," he says, "led me to make trial of aniline as a medicinal agent—the fact of its being an alkaloid, from which I inferred that it would act energetically on the animal economy, and, probably, on the nervous system, and the fact of its being present in Dippel's animal oil—an old antispasmodic remedy. This oil, Pereira tells us, is undoubtedly a very powerful agent. Swallowed in moderate doses, it stimulates the vascular and nervous systems, and is esteemed

antispasmodic. It has been used, he states, in hysteria and other affections of the nervous system accompanied with convulsive movements. There are other alkaloids in this oil—pyridine, picoline, lutidine, and collidine—to which its properties may be equally due; but the fact of aniline being the chief of them was one of the reasons that led me to make a trial of the sulphate of this artificial alkaloid.

Dr. T. relates six cases of chorea, and refers to two others in which sulphate of aniline was given with success.

"The beneficial effects," he says, "of sulphate of aniline have been most apparent in severe cases of St. Vitus's dance, and the first and the sixth that I have detailed were as bad cases as any I have met with where recovery has taken place. The others were cases such as usually yield to the ordinary means at present in the hands of the profession. Chorea is a disease which is generally amenable to the means of treatment we at present possess. Obstinate cases, however, occasionally occur where the disease yields only very slowly, or even baffles our treatment altogether. I have seen it prove fatal in more than one case, and Dr. Hughes, in his 'Digest of Cases of Chorea,' published in *Guy's Hospital Reports*, has recorded sixteen fatal cases. The introduction, therefore, of a new remedy, which appears to have a more direct and powerful influence on the disease than any we at present possess, is calculated to be of use, and I trust that it will be found worthy of the attention of the profession. It seems not improbable that it may prove a remedy of utility in other nervous affections. I have tried it in several cases of epilepsy, and in two cases it seemed to be of service; but I have not given it a sufficient trial to enable me to recommend it confidently in any other disease but St. Vitus's dance."

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22. *Chlorate of Potassa in the Treatment of Consumption and Scrofula.*—In our last number (p. 321 *et seq.*), we published a highly interesting and carefully drawn up clinical report by our esteemed colleague, Prof. Austin Flint, on the treatment of consumption by the chlorate of potassa. The result of these investigations seems to throw great doubt over the remedial powers of that article in phthisis, and such has also been the experience of several other careful practitioners.

A late writer, however, Dr. Alexander Harkin, of Belfast, claims (*Dublin Quarterly Journal of Medical Science*, Nov. 1861) for the chlorate of potassa great therapeutic powers in consumption and scrofula. Our readers will, we are sure, desire to learn what he has to say on the subject, and we therefore quote his statement.

"For a period," he says, "of nearly eighteen months I have been prescribing this remedy for every variety of scrofulous disease, and for consumption in its various stages; and although, for a disease of such protracted character as consumption, the period of observation is too limited to allow of complete or extensive statistical results, yet I consider that I am justified in stating that, with this simple remedy, in conjunction with the ordinary hygienic, dietetic, and moral means, a specific will be found for consumption in its first and second stages; and that, for the last, it will be found most potent in controlling the hectic symptoms and the colliquative diarrhœa, without increasing the perspiration, as in the administration of ordinary astringent remedies. When we have only tubercular deposition or softening to deal with, this remedy has a most powerful effect, when combined with judicious counter-irritation; but I do not mean to pretend that, by any species of medication, we could, in any instance, restore a patient with large cavities in the lung, with general tubercular infiltration, ulcerated trachea, and perhaps perforations of the pleura, any more than I would propose a universal remedy for the suppurative hepatization stage of pneumonia. It is needless to argue that, if the disease be removed in the first or second stage, we need not fear the last; and, as these stages usually extend over a lengthened period, and are those in which medical men are usually first consulted, the terrors and suffering of the last stage need not so much appal us.

"The curative effects of chlorate of potass in scrofula are perfectly marvellous; for it appears to exercise double influence when aided by the assistance of lungs comparatively or wholly sound; fifteen or twenty days generally suffice to

heal the most extensive ulcerations of the cervical and submaxillary lymphatic glands; strumous ophthalmia yields immediately to its internal use, and glandular enlargements and indurations of a scrofulous character in any part of the body appear to subside with wonderful rapidity. As to its mode of administration, I have generally given it internally in doses of from five to twenty grains, dissolved in pure water, four times daily; hot water takes up readily a scruple to the ounce without after-deposition, and this proportion is perhaps sufficient for any purpose, and as much as ordinary stomachs will tolerate. I have also used it as match-paper, burning it in the bed-room before the patient retires to rest; an ointment, prepared by triturating two drachms of the powdered salt with an ounce of lard, is also very serviceable in the removal of tumours, or for inunction over enlarged joints. On the occasion of first administering it internally, in the case of consumption, I was very watchful lest it might produce bronchial irritation, or intercurrent pneumonia. I have never found any bad effects of that kind follow its use; and, further than suspending it during the existence of hæmoptysis, I have learned to give it without fear in every stage of the disease. The first effect apparent to the patient is an immediate diminution of the crepitation, and this is an invariable sign; then a feeling of tonicity and vigour imparted to the system; the colour of the skin, and particularly that of the nails, gradually improves; the cough diminishes, and diarrhœa, if present, gradually disappears. As the treatment advances, the physical signs become less marked; the area in which they have manifested themselves gradually narrows itself; the blood appears altered in character—its solid constituents, its fibrin, and red corpuscles increase; muscular energy gradually returns; and even, in some instances, a disposition to plethora of the system develops itself, insomuch that, in several cases, patients have begged of me to permit them to diminish the dose, or refrain altogether from the use of the medicine.[1]

"I have mentioned already the impossibility, in a period of eighteen months, to present many striking absolute cures in consumption. Such results, I am happy to say, are, however, occurring in several instances now under my care."

23. *Chlorate of Potash for Fetid Breath.*—Many persons complain of having bad breath, although their teeth are quite sound and due care is taken of them, and although the mucous membrane of the mouth and the gums are perfectly healthy. The disagreeable odour may in these cases proceed from the lungs or the stomach, though in nine cases out of ten it arises from the stomach. In such cases, the following is a simple, prompt, and certain remedy. Three hours after meals, a teaspoonful of the following mixture should be taken: Chlorate of potash, ʒiss; sugar and water, ʒiv. The mouth should likewise be washed with the solution.—*Edinb. Med. Journ.*, Oct. 1861, from *Bulletin Général de Thérapeutique*, July, 1861.

24. *Treatment of Erysipelas by Perchloride of Iron.*—The No. of the *Edinburgh Med. Journ.* for July last contains some interesting remarks by Dr. WILLIAM PIRRIE, Jr., on Erysipelas and its treatment by perchloride of iron. "As the exact nature of the poison of erysipelas," he observes, "is unknown, we are not in possession of any remedy having the virtues of an antidote. Neither can any single plan of treatment yet devised be recommended as equally applicable to all cases, inasmuch as the features of many greatly differ, owing perhaps to the particular diathesis of the subject, or to his state of general health, and the circumstances he was placed in at the time of seizure, or to the peculiar type of the prevailing epidemic. That the last-named circumstance requires to be carefully weighed in every instance will at once be readily granted; for one visit to the majority of the cases of erysipelas of the head and face as now met with, will at once convince us that they are altogether unsuited for the bloodletting

[1] "In illustration of the flesh-producing power of the remedy, I may mention that a young man, a patient of mine, some three months returned from America suffering from phthisis, and then much emaciated, has gained six pounds in weight within the last four weeks."

and other powerful antiphlogistic remedies which seem to have been so beneficial according to the records of bygone observers.

"On the other hand, that the excessive stimulation so strongly advocated by some for every case of the disease in question, is not an indispensable remedial agency for successful treatment in most instances, may, I humbly think, be reasonably inferred from the multitudes of recoveries which have taken place under a more moderate use of stimulants.

"The conviction that erysipelas generally tends to a spontaneous recovery is by no means incompatible with holding the belief, that much may be done by suitable treatment to check the intensity of the disease, to alleviate or remove many of its most distressing symptoms, to maintain the vital powers, to moderate inflammatory action, and to assist the natural efforts at cure, and thus more surely conduct the disease to a favourable termination. Examples of the disease often occur, which from the first present a very unfavourable aspect, yet issue in recovery. Such recovery we may justly ascribe to the line of treatment pursued. It is, therefore, the duty of every one to place on record any plan of treatment which he thinks has been attended with success, and allow it to get a fair trial in the hands of others; to state fairly the effects which appeared to him to follow the employment of any particular remedy, in what respects it modified the intensity of the disease, and what symptoms it alleviated or controlled; without trying to deny that much is done for recovery in this disorder by the spontaneous operations of nature. It has always appeared to me, that in a careful study of this as well as other diseases, we discover certain landmarks or beacons, as it were, to guide us to the adoption of a scientific and rational method of treatment. We find, for example, that the disease cannot be cut short by any known agency, that it must run a definite course, that it early produces a most depressing effect on the system, that there are symptoms more particularly distressing than others to the sufferer, and that in due time nature employs a machinery of her own for the removal of the noxious matter from the system.

"The great indications of treatment, then, suggested by a consideration of these points, are—to uphold the powers of the system, to ameliorate or control the most distressing symptoms, to obviate the tendency to death, and to assist, if possible, the natural efforts at cure.

"The first indication is to be fulfilled by removing as speedily as possible any existing internal sources of irritation, by correcting any hepatic or alvine disorder, by rigidly enforcing thorough ventilation, with due regard to the maintenance of an equable temperature and guarding against exposure to currents, and by giving some medicine or remedies capable of imparting tone to the system and of upholding the vital powers. A marked feature of the disease, as already mentioned, is early depression of the various parts of the organism—the energy of the nervous system becoming rapidly exhausted—the vigour of the muscular system being speedily impaired—the tone of the vascular system lowered—the capillaries relaxed, and serous effusions quickly ensuing. I was induced, by the high terms in which many have written in favour of the muriated tincture of iron, recommended by Mr. Hamilton Bell, for the treatment of erysipelas, to try what effect the perchloride of iron might have on the disease. Having given it a fair trial in five successive cases, I will simply state the effects which I observed to follow, in the hope that others may give it a trial, and thus an opportunity be obtained of comparing the effects produced in different cases, and the means be acquired of arriving at some definite understanding as to its value in the generality of cases. In all the cases in which I used it, a decidedly beneficial effect seemed to be produced. The febrile condition seemed in all to be relieved, the frequency of the pulse reduced, the powers of the system generally upheld, and the stomach and bowels in no way irritated. Two circumstances I would particularly notice with regard to the perchloride in the cases in which I tried it. One which I carefully noticed was, that its use seemed in no way to be contraindicated by headache and sensorial disturbance; instead of increasing, it seemed to diminish these unpromising symptoms. The other circumstance to which I would particularly direct attention, is, that in the above cases the serous effusion was, throughout the entire course of the disease,

less copious, and also disappeared much more quickly, than in the generality of equally grave examples which I had previously seen.

"Two persons, who had a very severe attack, stated to me spontaneously, without my directing their attention in any way to the subject, that they very speedily felt a most decided general benefit from its use; and the others, on inquiry, said they 'felt it keep down the fever' and speedily diminish the 'tightness' of their face.

"The taste of the perchloride is to some very unpleasant, but it may be quickly removed by thoroughly washing out the mouth with water immediately after taking the solution. Special attention ought to be paid during its employment, to act on the bowels from time to time by some very mild laxative. What its specific mode of action is, I do not pretend exactly to know. Perhaps it may act beneficially, in virtue of powerful tonic properties, or its therapeutic value may reside in some peculiar influence it exerts on the blood, in consequence of its powerful disinfectant properties, or in its imparting tone to the capillary system, and counteracting the general relaxation of the capillary vessels. In the cases in which I used the medicine, I ordered it to be taken in quantities varying from fifteen to twenty drops every two and a half or three hours, according to the peculiarities of each case. This was persevered with till convalescence was fairly established, after which the iron was greatly reduced, and drachm and a half or two drachm doses of liquor ammoniæ acetatis ordered to be taken three or four times a day at proper intervals. The liquor ammoniæ acetatis acts very beneficially in the convalescent stage, by being a very gentle stimulant to the nervous and vascular systems, a mild diaphoretic, and an unirritating diuretic; and thus, by gently stimulating the functions of the skin and kidneys, it fulfils the last-named indication of treatment. In the course of any attack of erysipelas, just as in all fevers, the lowering effect of the disease may become so great, and the tendency to death, from failure of the vital powers, so strongly marked, as imperatively to call for the use of powerful stimulants. The employment of these agents, in this and in all diseases, to be beneficial, requires the greatest prudence and judgment in their selection and apportionment, and the most careful watching of the effects they produce. The exact form of stimulant, whether wine, brandy, or other spirit, must be determined by the particular situation of each individual case, and the previous habits of the patient.

"The delirium and coma which so often accompany erysipelas, are, according to general consent, the result of diminution or arrest of the cerebral energy, caused by mal-nutrition of the brain substance, and to be treated most successfully by the cautious use of stimulants. Cases, however, may occur in which some of the symptoms of genuine phrenitis appear, and then it might be judicious to employ some form of local depletion.

"The bronchitic attacks are to be treated by mustard cataplasms, blisters, or turpentine stupes to the chest; but the two latter I have once or twice seen irritate the renal organs very much in this disease. Should the attack supervene when the system is very low, stimulants must be given; but if during the period of convalescence, some simple stimulating expectorant, in addition to the counter-irritation, generally suffices for cure. If symptoms of œdematous effusion into the submucous tissue of the glottis and epiglottis arise, the speedy performance of tracheotomy affords almost the only chance of saving life. Of all local applications, perhaps the most serviceable and least objectionable, under all states of the skin, are flannels wrung out of hot water. This application, no doubt, is open to the objection of requiring almost constant attention, and of occasioning considerable trouble for its proper employment; but its advantages in many respects over unguents, dry powders, or other appliances, more than compensate for these slight drawbacks. When proper precautions are taken to maintain a uniform heat, by frequent renewal of the flannels, the application possesses the great advantages of being cleanly, generally agreeable to the feelings of the sufferer, unirritating to the skin, calculated to prevent any repression of the external inflammation, and not forming, as unguents and powders do, with any exudation which may have taken place, the scabs and crusts which become sources of great local irritation, and general discomfort to the invalid."

25. *Prevention of Pitting in Smallpox.*—Dr. Jos. Bell, of Glasgow, highly recommends (*Glasgow Medical Journal*, July, 1861) the application of cotton wool, saturated with the linimentum aquæ calcis, and applied to the face, &c., in the same manner as it is used in the treatment of burns, as a means of arresting the development of the variolous pustule and preventing the subsequent pitting. This plan he states he has found more successful and more free from objections than any of those hitherto employed. Besides preventing of pitting the liniment prevents the swelling of the face, and when this swelling has taken place it rapidly subsides after the use of the dressing.

Its mode of application is as follows: The liniment should be poured in on a plate; then masses of cotton wool, answering in size and shape to the parts to which the dressing is to be used, should be dipped in the liniment, and applied in such a manner as to completely cover the face and neck, leaving apertures for the eyes, nostrils, and mouth. The cotton should be closely matted together, so as to allow no crevice to exist, and a large handkerchief should be tied over all, having holes cut in it so as to correspond with the apertures over eyes, nostrils, and mouth. The dressing should be allowed to remain until convalescence, and if it becomes accidentally detached at any part it should be immediately renewed.

The great object seems to be to exclude air and light, and this dressing accomplishes this indication better, Dr. B. thinks, than any other. He has tried, he states, all the modern ectrotics, and found each more or less objectionable; for example:—

"1. The puncture of the vesicle and application of the nitrate of silver, as recommended by Serres, Bretonneau, and Velpeau, caused much pain, increased the swelling of the face, and after all proved only partially successful in preventing pitting.

"2. I tried the sulphur ointment recommended by Midivaine, and found any little benefit which arose from it more than counterbalanced by the very disgusting smell exhaled.

"3. I have employed the mercurial ointment and plaster, lauded by Oliffe and others, with very considerable benefit; but it gives the patients such a disagreeable aspect, and at the same time exposes them to the risk of salivation, that I have always used it with no small amount of hesitation. Again, when the emplastrum vigo was used, its presence was not only painful, but it also increased the irritation of the skin and augmented the swelling.

"4. The tincture of iodine, as recommended by Dr. Crawford, I have found much less efficacious than the mercury; indeed, in my experience the application of the iodine seemed to have very little effect, either in preventing pitting or allaying the swelling.

"5. The solution of collodion I found lessened the amount of pitting, but it very often increased the irritation of the skin, and consequently augmented the febrile disturbance. When it becomes dry it contracts, a circumstance which at first sight would seem to have a favourable influence on the congested vessels of the skin, by pressing as it were the blood out of them; but I found that this very pressure had the effect of acting as an irritant, and thereby increasing congestion. Again, to be of any use, the solution requires to be often repeated, because it soon breaks up and adheres to the skin in hard detached patches, the edges of which irritate the skin exceedingly.

"6. Glycerine I found of little value, because it either ran off the face, or dried up very soon after it was applied, and it appeared to me to be very objectionable from the sharp smarting which it caused.

"7. I have seen a solution of nitrate of silver and collodion in glycerine applied to the face, and undoubtedly it was very effective in preventing pitting: but it produced a most repulsive appearance, and caused considerable pain to the patient.

"8. I have employed lard, oil, and the linimentum aquæ calcis, and found that if any of them were constantly applied, no irritation was produced, and that the pitting was very much modified. But as all these substances either run off the face soon or become dry, their benefit entirely depends on the assiduity with which their application is repeated."

26. *Methods of Preventing Pitting of the Face in Confluent Smallpox.*—During the last five years Dr. STOKES has employed gutta percha and collodion in a considerable number of cases of confluent smallpox, for the purpose of preventing pitting of the face. In most of the cases the crust came off in large flakes or patches, composed of the dried exudations and the covering material, leaving the skin uninjured. This kind of treatment was most adapted to those presenting a more sthenic type. Dr. Stokes considers that the application of poultices over the face is the surest method of preventing disfigurement in smallpox. Their use should be commenced at the earliest period, and continued to an advanced stage of the disease. In most cases they may be applied even over the nose, so as to cover the nostrils. The plan should fulfil three important indications of treatment: namely, to exclude air, to moderate the local irritation, and to keep the parts in a permanently moist state, so as to prevent the drying and hardening of the scabs. The best poultice is formed of linseed meal, which should be spread on a soft material, such as French wadding, and covered with gutta percha paper or oiled silk. The conclusions to which Dr. Stokes arrives are the following: 1. The chances of marking are much greater in the sthenic or inflammatory than in the asthenic or typhoid confluent smallpox. 2. Considering the change in the character of the disease observed during late years, we may explain the greater frequency of marking in former times. 3. In the typhoid forms of the disease the treatment of the surface by an artificial covering, such as gutta percha or glycerine, will often prove satisfactory. 4. In the more active or non-typhoid forms the use of constant poulticing, and of every other method which will lessen local inflammation, seems to be the best mode of preventing disfigurement of the face.—*Dublin Quarterly Journal.*

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27. *Actea Racemosa in Acute Rheumatism.*—Dr. F. R. MACDONALD, of Inverary, extols (*Edinb. Med. Journ.*, Oct. 1861) the efficacy of the tincture of actea racemosa in acute rheumatism. He gives it in doses of from twenty-five to forty drops three times a day, and he says with uniform success. It is, he states, in the severest forms of the disease that the beneficial effects of the remedy are best seen.

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28. *Arsenical Baths in Chronic Rheumatism.*—From the circumstance that most of the mineral waters alleged to be successful remedies in chronic rheumatism contain arsenic, M. GUENEAU DE MUSSY, of Paris, has for two years been led to try the effects of arsenical baths in this disease. He arranges cases of chronic rheumatism in two classes. In the first, the morbid process is evidently chronic in its duration, progress, and symptoms. In the other, the disease is more recent, the reactionary phenomena are less effaced, and the nervous excitability is much developed; or rather the disease, though chronic in regard to long standing and obstinacy, seems to be made up of a series of attacks of an acute or subacute nature. In the first class of cases, where the chronicity is distinctly marked, M. Gueneau de Mussy employs baths containing 100 *grammes* of subcarbonate of soda with one *gramme* (15½ grs.) of arseniate of soda; the quantity of the latter being soon increased to two *grammes*. In the second class, if there be fear of producing over-excitement, the arseniate of soda is used alone in quantities of from one to three *grammes* in a simple or in a gelatine bath.

The effects observed have been the following. Several patients, while the first baths were being taken, have complained of pain in the affected joints. Almost all have felt while in the bath, and especially on leaving it, an unusual feeling of suppleness and of power to move about. In a very small number, the first baths have been followed by diarrhœa or even by nausea; in one patient, a very moderate diarrhœa attended each use of the bath, but did not interfere with the cure. Some have had transient phenomena of excitement, agitation, and insomnia; and in some, erythematous eruptions have appeared. When the bath of both subcarbonate and arseniate of soda was administered in cases where the disease was still recent, and when the patients were predisposed to reaction and of great nervous excitability, the phenomena of excitation were more intense, and the affection of the joints assumed a more acute form for some days. These

accidents are avoided by the use of the arseniate of soda alone. No traces of the mineral have been found in the urine. At the commencement of the treatment, M. Gueneau de Mussy employs the bath on alternate days; and, when the patients have become accustomed to it, he orders it daily, omitting it for a day from time to time. The duration of the treatment varies; one patient took sixty baths, but he continued them long after he had derived as much benefit as could be expected. At the same time with using the baths, the patients take decoction of guaiacum and a mixture containing extract of cinchona and iodide of potassium.—*Brit. Med. Journ.*, Sept. 28, from *Gazette des Hôpitaux*, Aug. 10, 1861.

29. *Internal Use of Chloroform in Cases of Biliary Calculi and Hepatic Colic.* By Dr. Bouchut.—Following the example of Durande, many practitioners have used ether mixed with essence of turpentine in cases of biliary calculi, and in the hepatic colics which they determine. These substances have a real action upon cholesterine, which they dissolve pretty readily, and it is this solvent action which accounts for their use in practical medicine. Chloroform is, however, in this respect a much more powerful agent than ether. In the course of twenty-four hours one-half of a biliary calculus was dissolved in a saturated solution of chloroform, and the liquid became of a dark yellow colour, whilst the other half of the calculus, placed in a mixture containing the same quantity of ether, was scarcely acted upon, and the liquid remained almost colourless. This important result led Dr. Bouchut to employ chloroform in a case of hepatic colic with jaundice, caused by the presence of calculi in the biliary passages, and the treatment was followed by complete success.

Mr. V., of a sanguine temperament, had never been out of health till, in 1857, he was attacked with diarrhœa, which lasted for some months. In 1858 he was perfectly recovered, when he was attacked with violent gastralgia, unaccompanied by fever, but attended with slight mucous vomiting, and succeeded by slight jaundice. The attack lasted for two days, then disappeared, leaving his health unimpaired. From that time similar attacks, lasting for two or three days, recurred at intervals of a few months. In the month of November, 1860, and for the sixth or seventh time, violent pains in the epigastrium, shooting into the hypochondriac regions, made their appearance suddenly during the night. They were accompanied by great tension of the abdomen, and were somewhat aggravated by pressure. The pain was so severe as to make the patient cry out, and roll about in bed. At intervals it ceased for a few minutes, but only to reappear with the same violence. There were efforts at vomiting, which produced a scanty discharge of glairy matter. The countenance was depressed, the eyes were sunk, there was a faint yellow coloration of the skin and conjunctivæ, the bowels had not been open for two days, the tongue was natural, there was no thirst nor fever. These pains continued two days, and were calmed by the use of opium under different forms. After their cessation the patient was ordered to take chloroform syrup, according to the following prescription: Chloroform, ʒiij; alcohol, ʒiij; syrup. simpl. ad. ʒxx. This mixture was to be employed in such doses as that the patient should take daily half a drachm of chloroform. At the end of a month, Dr. Bouchut ordered this treatment to be discontinued, and to be replaced during a month by Vichy water. At the end of this time the Vichy water was discontinued, and the chloroform was resumed, but only to the amount of fifteen drops daily. The same treatment has been continued up to the present time, the chloroform mixture and Vichy water being administered alternately. Seven months have now elapsed, without the least appearance of a recurrence of the disease.

Dr. Bouchut has likewise employed chloroform in injection in the case of several little girls affected with chorea, and has noticed a sensible amelioration in their condition.

In order to have a stable preparation of chloroform which can be mixed in any proportion with water, wine, or syrup, Dr. Bouchut employs alcohol, which he considers much preferable as a solvent to glycerine, in which the chloroform is chiefly in a state of suspension. Dr. Bouchut's formula is one part of chloroform for eight of alcohol, and in this proportion the mixture, added to syrup,

water, or any other recipient, gives a perfectly stable preparation.—*Edinb. Med. Journ.*, Oct. 1861, from *Journal de Médecine et de Chirurgie Pratiques*, September, 1861.

30. *Treatment of Earache.*—M. EMILE DUVAL says that he has, in person, found relief in severe earache, after other means had been tried in vain, from the use of a mixture of equal parts of chloroform and laudanum; a little being introduced on a piece of cotton. The first effect produced is a sensation of cold; then there is numbness, followed by scarcely perceptible pain and refreshing sleep.—*Gaz. Méd. de Lyon*, 1 July, 1861.

31. *Researches on Resuscitation.*—Dr. B. W. RICHARDSON read before the Physiological Section of the British Association for the Advancement of Medical Science, at its late meeting, an account of his researches on resuscitation. He stated that "the idea of the possibility of restoring life after some forms of death was noticed by the Greeks, by Roger Bacon, by Harvey, by Stahl, and by Hunter. The author should define death as a condition in which respiration and the heart-beat had ceased. The only forms of death in which means of resuscitation could be used are those in which it had occurred without injury to the structures of the body—such as drowning, the inhalation of chloroform, sudden death, and suffocation by carbonic acid. The methods employed for resuscitation are artificial respiration, galvanism, injection of fluids into the bloodvessels, and artificial circulation. Dr. Richardson gave the results of sixty cases, in which simple air was used; and of experiments in which oxygen, peroxide of hydrogen, chlorine, heated air, or ozone were employed. The great point brought out was that the inhalation of air at 130° materially favoured the restoration of life when the heart had not stopped; and the author suggests that in all receiving-houses for persons apparently dead, a heated air-bath shall be kept ready. When the heart has quite ceased to beat, no artificial respiration can be of any avail. Galvanism was first used by Aldini. It could be employed for one or two purposes, such as starting respiration or the heart; but up to the present time, as employed, it has been an entire failure, and as it excites muscle, it is worse than useless, and should not be applied. The idea of injecting the bloodvessels was first thrown out during the sixteenth century; and it has been shown by recent inquiry that the injection of blood into animals even when stiffened by death, will reproduce muscular action. The author discovered that warm water will produce the same effect. The difficulties consist, as regards blood, in obtaining it; and in the case of water, in the fact that it decomposes blood after a time. The author has tried various other agents of injection, such as oxygen and the peroxide of hydrogen; but these failed from physical reasons. The author's last plan was a method of starting mechanically the blood in the dead body, or of artificial circulation. There are three methods by which this can be attempted; but they have as yet been operations of too formidable a nature to be used practically. The author's conclusions are: In cases of suspended animation, if a patient breathe at all, place him in warm air and give plenty of it; but do not meddle further. If respiration has ceased, set it up by means of bellows and warm air; continue this for fifteen minutes if necessary; for the heart may not have ceased to act, and, if not, the operation often succeeds. The common practice of using galvanism or electricity in an empirical way is unadvisable and often dangerous. The great desideratum is an improved method of producing an artificial circulation of blood, and so supplementing the heart."—*Brit. Med. Journ.*, Oct. 5, 1861.

32. *A Peculiar Form of Obstinate Vomiting in Children.*—Dr. LOMBARD, of Geneva, in a paper read before the Medical Society of that city, stated that in the course of thirty-one years' practice he has met with seven or eight cases of a singular gastric disorder in children aged from five to twelve years. The characteristic symptom of the disease is incessant vomiting, coming on without evident cause, in apparently the best health, and repeated every quarter or half hour. The vomited matter is purely watery, with some glairy filaments; it contains no bile, blood, nor food. The quantity diminishes from the commencement of the

attack; and when the vomiting continues several hours, mucus alone is at last expelled after much effort. The attacks of vomiting are accompanied and followed by intense thirst, retraction of the abdomen, considerable feverishness, and obstinate constipation. Their duration rarely exceeds forty-eight hours; they generally end in eighteen or twenty-four hours. The vomiting is generally accompanied by paleness, loss of flesh, and an appearance similar to that which is observed in cholera. The disorder has generally appeared between the sixth and seventh years of age; it seems to diminish in intensity as time advances, and rarely lasts beyond the twelfth or fourteenth year. There is a remarkable tendency in the disease to repetition; all Dr. Lombard's patients had attacks at intervals of a few weeks during several years; and in one, in whom the paroxysms were always very severe, they lasted until his eighteenth year, when, although he had been for some time free from the disorder, he was seized with incessant vomiting at the commencement and during the first stage of measles. The effect produced on nutrition is remarkable. Most of the patients remained thin, pale, and weak for a number of years; in two girls, who were under Dr. Lombard's observation many years, anæmia was so intense that there was anasarca, not only of the limbs but also of the trunk and face; and yet there was neither diarrhœa, albuminuria, nor cough; nor could the most careful examination detect any organic lesion. One case only proved fatal, in a child aged seven or eight years. At the *post-mortem* examination, the mucous membrane of the stomach was found to be perfectly healthy, without redness, softening, ulceration, or erosion; the intestine, peritoneum, and mesenteric glands were also healthy, as were also the other abdominal organs. In the treatment, Dr. Lombard has tried opiates, bismuth, nux vomica, iced milk or water, ice in pieces, and sinapisms or opiate poultices to the abdomen; but nothing has succeeded so well as total abstinence from drink or medicine. Resisting the entreaties of the patient for drink, he allows nothing to be introduced into the stomach. When the violence of the attack is somewhat assuaged, a teaspoonful of iced water may be given at long intervals, the quantity being increased to a tablespoonful; and when there has been no vomiting for eight or twelve hours, cold chicken-broth or milk may be given by spconfuls. Great care is required in managing the administration of food; as relapses are likely to occur when it is given too rapidly or in too substantial a form. Enemata are generally required during convalescence; and, if these fail, some mild evacuant, such as castor oil or manna, should be given. With regard to the pathology of the affection, Dr. Lombard says that it is evidently not a gastric inflammation; for such a condition would not disappear so completely in the intervals between the attacks as to allow the patient to regain a certain amount of strength and *embonpoint;* besides which, the total absence of inflammatory lesion in the necropsy of the fatal case contradicts the idea of inflammation. It is not the chronic catarrh of the stomach of MM. Rilliet and Barthez; the milder form of which is characterized by alternations of constipation and diarrhœa; and the more severe by a permanent intolerance of food; nor can the vomitings be considered as purely spasmodic, or the result of a gastric neuralgia.—*Gazette Médicale de Paris,* 18 May, 1861.

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33. *Serous Collections in the Female Pelvis.*—M. Demarquay describes (*Gaz. Méd. de Paris,* August 31, 1861) a form of serous collection in the pelvis, connected with non-puerperal recto-peritonitis, or rather with serous pelvi-peritonitis. The true nature of these collections has, he says, been mistaken by other authors. A case in illustration is recorded. A woman came under M. Demarquay's care, on account of the sequelæ of a severe attack of metro-peritonitis. She was found to have a collection of serum in the pelvis. The uterus and bladder were pushed forwards, the rectum backwards; and the functions of these organs were notably impeded. Five hundred and twenty *grammes* of a yellow fluid were removed by a trocar, and the cavity was injected with a solution of iodine. The patient recovered perfectly. The fluid resembled closely the serum of the blood; and M. Demarquay believes that it was effused into the *cul-de-sac* of the peritoneum between the uterus and rectum, inflammation having extended to this part from the uterus. The diseases with which this serous col-

lection is apt to be confounded are peri-uterine hæmatocele, and ovarian cyst; but attention to the history of the case, and to the general and local symptoms, will establish the diagnosis.

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34. *Obstruction of the Abdominal Aorta by a Clot (detached from the Left Ventricle); Gangrene of the Foot; Death.*—M. BROCA, of the Hôpital de Bicêtre, has communicated to the Societé de la Chirurgie, the history of a very interesting case in which this train of events occurred. The patient was a man, æt. 61, who applied to the Bicêtre, on account of a dry gangrene of the little toe of the left foot. He was the subject of a complete paralysis of all four limbs, which had existed with but little alteration since the original attack of palsy, more than thirty years previously. During the latter part of this period, the muscles of the neck had become very weak, and, at the date of his admission, the intercostal muscles had almost entirely ceased to aid the respiratory movements. Sensibility was, as it always had been, perfect. The gangrene was dry, and strictly limited to the little toe. The arteries of *both limbs* were explored carefully from the iliac fossæ to the feet, and neither yielded any sense of pulsation whatever; yet there was no obstructing clot to be felt anywhere in their course. The limb which was the subject of gangrene in its extremity, presented no difference from its more fortunate fellow. Both limbs were of fully normal temperature; from the groins to the knees, they were about equal in this respect; at the level of the *knee*, however, the left limb was the hotter; the left foot, on the contrary, was the colder of the two. A small bedsore which existed on the sacrum rapidly increased in size during the three weeks which succeeded admission to the hospital; diarrhœa also set in, and the patient became extremely weak; still, so far, the gangrene maintained its *dry* character, and had made but inconsiderable progress; but, at this date, there commenced a rapid extension of the sphacelus, which now assumed the thenical type, and rapidly engaged the whole foot, and the inferior fourth of the leg. Simultaneously with this change, the temperature from the knee downward fell sensibly *below* that of the healthy limb. The patient sank, exhausted, on the fourth day from the exacerbation of the gangrenous process.

Autopsy.—The muscles and the bones of the palsied limbs were soft and highly fatty. The brain was healthy. The anterior column of the spinal cord—from the level of the fourth ventricle to the lower part of the dorsal region—were *diffluent*, and of a milk-white colour; the posterior columns were also slightly softened, superficially.

The arterial system was almost free from atheromatous disease. The abdominal aorta was obstructed, from its bifurcation for about an inch and a half upwards, by a clot formed of two distinct parts. The larger part (nearest the bifurcation) was of a gray colour, friable, not very adherent to the walls, and was continued into the two common iliacs. Its upper surface presents an abrupt anfractuosity, *as if it had been broken off from somewhere.* The upper portion of the clot was of a red colour, a firmer consistence, and an evidently more recent date of formation, than the lower part. It obstructed the aorta as high as the origin of the last pair of lumbar arteries, when it terminated in a conical point.

In the left ventricle of the heart was formed a clot, entangled among the columnæ carneæ, and firmly adherent to the ventricular wall—which, in colour and consistence, and by its broken anfractuous free surface, closely corresponded to the lower part of the aortic clot. It was evidently too old to have been formed during the death-agony.

The left femoral artery was pervious down to the opening in the adductor. Just above this, a very large collateral branch passed off; and from this point downwards, the femoral and popliteal artery, and the three crural branches for some distance, were obstructed by a clot, for the most part recent. M. Broca supposes that, in the first place, a portion of the cardiac clot was broken off, and carried by the stream of blood to the bifurcation of the aorta, where it lodged, becoming the nucleus for the further deposit of a more recent clot above it. That the circulation of the limbs was sufficiently restored, after the first accident, by collateral channels. That then, possibly, some fragments, detached

from the iliac clot on the left side, came to form the nucleus of a new obstruction in the left popliteal artery; and this, in its turn, produced the gangrene. M. Broca compares his case with an extremely interesting parallel one which occurred in 1849; the subject of it being an inmate of the Hôpital de la Pitié. Here, a clot was detached from the heart, and, passing into the aorta, obstructed it. From this point, a clot gradually extended downward into the right popliteal artery; obliterating it, and causing fatal gangrene of the leg.—*London Med. Rev.*, Sept. 1861.

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35. *Sempstresses' Palsy.*—Under this name Dr. Van Holsbeek describes an affection having a certain degree of analogy to writers' cramp (or rather to "scribe palsy"). It consists in an entire or partial loss of sensation at the end of the right thumb and index finger, with loss of power to hold the needle. Sometimes, but rarely, the finger and thumb of the left hand are similarly affected. The fingers frequently diminish in volume, and more or less rapidly lose the power of contraction. The muscles especially affected are the opponens pollicis, the flexor brevis and adductor pollicis, the first two lumbricales, and the abductor indicis. At the same time, the skin of the palmar surface of the thumb and index finger, especially at their tips, becomes insensible; and the anæsthesia frequently also affects the middle finger. This paralysis rarely appears suddenly. There is first cutaneous anæsthesia; then the electro-cutaneous sensibility is diminished or abolished, and the electro-muscular contractibility more or less diminished. The most preferable means for the treatment of this affection is electrization.—*Brit. Med. Journ.*, Oct. 12, 1861, from *Bulletin Gén. de Thérap.*, 16 July, 1861.

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36. *Syphilis conveyed by Vaccine Lymph to Forty-six Children.*—This melancholy occurrence took place in the village of Rivolta, near Acqui (Piedmont). "The facts connected with this unfortunate wholesale contamination are as follows:—

Towards the latter end of May last, M. Cagiola, a surgeon, vaccinated Giovanni Chiabrera, aged eleven months, and in good health, with lymph obtained in a tube sent from Acqui. The operation was performed in the ordinary manner, and with, as M. Cagiola affirms, a very clean lancet. On the tenth day after this, forty-six children were vaccinated with the lymph contained in the vesicle of the child Chiabrera; and ten days after these latter operations, seventeen other children were vaccinated from the lymph of one of the forty-six infants just mentioned.

Hence we have sixty-three vaccinated children, forty-six of whom were more or less affected with syphilis within two months after the first operation. In the first series of forty-six vaccinations there were thirty-eight cases of syphilis, besides little Chiabrera, the child vaccinated with the lymph contained in the tube; and in the second series, comprising seventeen infants, seven were affected. The child Chiabrera was in a state of marasmus on the 7th of October, and the infant from whom the second series of seventeen had been vaccinated died a month after the operation.

These facts having come to the knowledge of the Medical Congress at Acqui, from statements made by Dr. Ponza, it was agreed that a committee, elected from amongst the members of the Congress, should proceed to Rivolta to inquire into these melancholy occurrences. From the able report of Dr. Pacchiotti we extract the following particulars:—

The investigations of the committee were considerably aided by the unwearying exertions of Dr. de Katt, practising in the village. It has been found that of the forty-six children affected with syphilis, the cases of only twenty-three could be accurately noted, as the parents of the children neglected to call in medical aid at the proper time. These twenty-three cases were, however, sufficient to enable the committee to come to a clear diagnosis. In the whole forty-six cases, the symptoms of syphilis appeared, on an average, on the twentieth day after vaccination—viz., varying from ten days to two months. Sometimes the vaccine vesicle, just on the point of cicatrizing, inflamed, and became surrounded with a red, livid, and copper-coloured areola, and then spread and sup-

purated anew. At other times, when the cicatrix was complete, an ulcer would form upon it, the crusts of which would fall off and fresh ones be produced. With some children the vesicles looked bad from the first, and were accompanied by a general eruption, which the country people considered as smallpox, and the characters of which the medical men of the neighbourhood were not always able to ascertain. On the 7th ult. it was discovered that seven children had died without treatment, and before attention had been directed to this unfortunately fast spreading contamination; three were in danger, and fourteen recovering, after having been subjected to a specific treatment. Thirty-eight at that period were under treatment, which consisted of frictions with mercurial ointment in the groins, axillæ, and on the limbs, with small doses of iodide of potassium in sarsaparilla syrup.

The principal symptoms noted by the committee were: mucous tubercles on the verge of the anus and genital organs; sores on the lips and fauces; swelling of the lymphatic glands in various regions; syphilitic eruptions of different kinds; loss of hair; secondary ulcerations of the prepuce; deep tubercles of the cellular tissue; gummy tumours, &c. Two children out of the twenty-three were in a wasting condition, and suffering from syphilitic cachexia; while some of the mothers had mucous tubercles on the nipples. In fact, the twenty-three cases are carefully related in the report, all the children having been seen by the members of the committee.

As to how the disease thus came to spread amongst these infants, the committee refrain from coming to a hasty conclusion, and ask for time to solve the mystery; the more so as these facts tend to no less than a complete upsetting of opinions hitherto held as very trustworthy. Thus the belief of two diseases not having the power of developing at the same time upon the same individual falls to the ground, as well as the non-contagious nature of the secondary symptoms of syphilis.

Dr. Pacchiotti, the author of the report, indulges in commentaries on this sad case, and throws out, with extreme humility, various explanations, though trusting completely to none. He invites discussion and reflection on the phenomena which have been observed. Nor does he fail to record that such transmission has been before noticed. Dr. Parola has mentioned in his work *On Doctrines Connected with Vaccination*, a case, reported by Tassani, of Milan, in which a boy, whose father had at the time secondary sores on the scrotum, was vaccinated from a healthy child. From the vesicle of this boy fifty-six children were vaccinated; out of whom, thirty-five were, in a few months, syphilitic, and had diseased their mothers. On the other hand, it should be noted, that lymph from eight of these thirty-five syphilitic children was used to vaccinate a second series of thirty-four, and *none* of the latter showed any syphilitic symptoms. Another case (which was brought before courts of justice) runs thus: In 1846, many revaccinations took place in the town of K——, where a surgeon revaccinated about ten families on account of an epidemic of smallpox; and the punctures, in three or four weeks, degenerated into syphilitic ulcers, followed soon afterwards by secondary eruptions. Hübner, in 1852, vaccinated thirteen children; of whom the greater part became syphilitic, though the rest escaped. Experiments have been undertaken by Pitton, Boucher, Ceccaldi, and Lecoq, which prove the transmission of syphilis through vaccination; whereas other experiments made by Schreier, Montain, Bidart, and Taupin, show, on the other hand, that vaccine lymph obtained from a child, evidently labouring under hereditary syphilis, produced no evil effects upon those vaccinated with it. The reporter further alludes to an important thesis of M. Viennois, 'On the Transmission of Syphilis by Vaccination;' and to the chapter on the same subject in the book of M. Rollet, of Lyons, entitled 'Clinical and Experimental Researches on Syphilis.'

From the facts related above, Dr. Pacchiotti deduces the following rules:—

1. Examine carefully the child from whom the lymph is taken.
2. Try to learn the state of the parents' health.
3. Choose, in obtaining the lymph, such children as have passed the fourth or fifth month, as hereditary syphilis, in general, appears before that age.
4. Do not use the lymph after the eighth day of the existence of the vesicle,

as the lymph on the ninth and tenth days becomes dull by mixture with pus, which latter may be of an infectious nature.

5. In taking the lymph with the lancet, avoid hemorrhage, as there is less danger with pure and transparent lymph.

6. Do not vaccinate too many children from the same supply."—*Lancet*, Nov. 16, 1861, from *Gazetta della Assoc. Med.*, Oct. 20, 1861.

37. *Rabies Canina.*—The following are the conclusions of a memoir by M. Boudin. 1. We may estimate the number of dogs in Europe at more than twelve millions, and the cost of their keep at a million francs per diem, or half a milliard per annum. The annual number of victims amounts to several hundreds. 2. In the immense majority of cases rabies is propagated by the bite of the mad animal, although sometimes it appears to have been transmitted by licking the skin, when more or less excoriated. 3. The perusal of the innumerable documents which have been published on the subject does not reveal a single fact capable of furnishing serious scientific proof of the occurrence of spontaneous rabies canina. 4. Even if this spontaneous occurrence ever did take place, it would do so with such rarity, that it would scarcely be necessary to take it into consideration in framing measures of sanitary police. 5. The old hypothesis, recently revived, which attributes rabies to unsatisfied genetic instinct, does not bear the slightest examination. 6. The influence attributed to the temperature and humidity of the air on the frequency of rabies is contradicted by facts. 7. The pretended rabic epizootics described by authors are only multiple instances of communicated rabies; and the term epizootic, in this case, should be excluded from the language of science. 8. We are in the possession of no positive data as to the extreme limits of the period of incubation of rabies in man. In the dog it would seem to last seven months (Youatt), and in the horse fourteen months and a half. 9. No true pathognomonic sign of rabies exists in the dog, hydrophobia, properly so called, seeming to be here quite at fault. The peculiar howling bark is of great value in the diagnosis. 10. Science is in possession of nothing certain regarding the alimentary nocuity or innocuity of the flesh of mad animals, or of the milk of cows and goats bitten by mad animals. 11. With respect to the measures of public hygiene and administrative police: (a) The tax on dogs has had the effect of diminishing their number, and so far the chances of the occurrence of rabies and hydrophobia. (b) As rabies may manifest itself throughout the year, the surveillance of dogs should never be suspended, and they should always be kept muzzled. (c) As bites have often been inflicted by muzzled dogs (20 times in 156) the proper application of the muzzle should be strictly seen to by the police. (d) Dogs which have been bitten by dogs that are either mad or suspected of being so, when not immediately killed, should be sequestered for a period, at least, equal to the known maximum of duration of the period of incubation.—*Union Médicale*, No. 136. [M. Fauvel, the French Sanitary Officer, at Constantinople, stated at one of the French Medical Societies (*Gaz. Hebdom.*, No. 45) that hydrophobia, although a very rare disease in the East, is yet occasionally met with in Constantinople, some seven or eight cases having occurred there of late years. According to the popular opinion there, rabies only occurs among the domesticated dogs, while the wandering dogs, which are numbered by thousands in that city, never become the subjects of the disease.]—*Med. Times and Gazette.*

38. *Acute Atrophy of the Liver.*—Dr. Wilks stated to the Pathological Society (Nov. 19, 1861) that this was one of the most remarkable diseases to which the human body is liable: a form of jaundice of the most acute kind, attended by symptoms of blood-poisoning and derangement of the nervous system; in which the liver is found reduced to a very small size, and to have undergone a most complete disintegration of its structure, so that sometimes on microscopic examination not a single healthy cell can be discovered. It has been shown also of late by Frerichs that a decomposition takes place, whereby new products are formed, which are carried by the blood into various parts of the body, and especially to the kidney, whose office it is to eliminate them. These crystalline bodies being discovered in the urine assist in the formation of a diagnosis of the case.

Case 1. Elizabeth K——, aged seventeen, was lately seen by Dr. Wilks, with Mr. Bisshopp, of South Lambeth, suffering from this form of disease. She had only been ill with jaundice for six days, and for the first four no very urgent symptoms were present; she then had a fit, became unconscious, and remained so until Dr. Wilks saw her. She was in a state of coma, with stertorous breathing, foam on the lips, teeth clenched, tongue brown, pulse quick, and skin jaundiced—a combination of symptoms suggesting suppression of urine as well as hepatic disease. On percussion over the liver, only a very narrow region of dulness was discovered, indicative of the great shrinking of the organ. She was a married woman, and had had some quarrels with her husband, so that a strong mental influence was discovered as predisposing to the complaint. She had also missed three menstrual periods. In the evening she miscarried, and on the following day she died.

With great difficulty permission was gained to make an incision in the abdomen, so as to remove a portion of liver, a kidney, and the uterus. The latter showed that abortion had lately occurred. The liver was very much atrophied, and when examined by the microscope, not a single healthy or entire cell could be found; nothing being observable but disintegrated hepatic tissue, oil-globules, and the crystalline bodies, such as Frerichs describes under the name of *leucine* and *tyrosine* substances, which hitherto have only been made by the chemist by artificial means. The kidney showed the tubules completely filled by disintegrated matters, and the same form of crystals. The urine, which had been drawn from the patient during life, presented casts of tubules, and, when evaporated, the substances above mentioned in very large quantities—needle-shaped crystals of tyrosine and rounded masses of leucine; the latter were mostly found in the film which formed on the surface.

Case 2. Ellen L——, aged twenty-three, admitted under Dr. Wilks' care into Guy's Hospital on June 29th, and died July 7th. She had not been married long; but quarrelling with her husband had already occurred, and she was said to be a woman of dissolute habits. For the first five days, although extremely ill, she was thought to be suffering from simple jaundice. She then, however, was seized with severe vomiting, and fell into a typhoid state; delirium came on, and she died.

The *post-mortem* examination showed ecchymoses on various organs of the body. The liver was shrunken, and lying against the diaphragm; it weighed only 1 lb. 3 ozs. (This was exhibited to the Society.) Its section showed a peculiar red and yellow mottling, always observed in this disease, and the microscope was unable to detect but very few cells which were not completely broken up.

Case 3. Elizabeth B——, aged thirty, admitted under Dr. Barlow on July 12th, and died July 14th. She was a servant, had suffered from jaundice for three or four weeks, and when the severe symptoms appeared she was brought to the hospital. She was then in a dying state, and the nature of the case was evident.

The body presented purpuric spots in various parts. The liver was shrunken, so as to weigh only 1 lb. 9 ozs.; it showed on the surface, as well as in the interior, a peculiar mixture of red and yellow colours. The tissue was quite disintegrated, so that few entire secreting cells were discoverable. The kidneys were large, and tubules gorged with dark granular and biliary matter. The urine also contained tubular casts, and masses of epithelium and pigment.—*Lancet*, Dec. 7, 1861.

SURGICAL PATHOLOGY AND THERAPEUTICS, AND OPERATIVE SURGERY.

39. *Treatment of Pyæmia and Hospital Gangrene.*—By Prof. JÜNGKEN, of Berlin. These diseases are more easily prevented than cured. For prevention, it is necessary that the most scrupulous cleanliness should be rigorously carried out in the treatment of the wounded, and, where many patients with ulcerations

are congregated in rooms, thorough ventilation should be attended to. Where the surgeon has the choice, he should object to the reception of a large number of wounded persons in one common ward, as this is only too often the cause of pyæmia and hospital gangrene. Where there are no other contrivances for ventilation, the doors and windows should be opened, even if the patients complain of cold. The patients should also be frequently bathed. If the wounds are severe and the suppuration considerable, the perpetual bath is very useful for preventing these diseases; but the water should be often changed so that it does not become impregnated with the pus. Local baths, where they can be had, are also very useful; otherwise, a half or a whole bath ought to be given. Concerning local baths, Professor Jüngken condemns such tubs as are furnished with caoutchouc rings, through which the limbs are put, as, in order to prevent the water from flowing out of the tub, the caoutchouc ring must fit the limb so closely that the veins thereby become compressed, and thus a free circulation is impeded and mortification induced. If the bath is to be useful to the patient, the limb must rest in the water quite free and without any troublesome pressure. Fumigations with chlorine or vinegar are only feeble palliative means, which may be applied where no fresh and pure air is to be had. If fumigations must be made, those recommended by Guyton with chlorine are preferable to those with vinegar; but they never purify the air of sick-rooms so thoroughly as is done by fresh air, and in many patients they produce troublesome symptoms on the part of the respiratory organs.

As wars are generally undertaken in the warm, fine seasons, this being favourable to the movements of large armies, it is just at this season that great numbers of wounded have to be treated. The locality of great battles being dependent upon accidents which cannot be foreseen, the surgeon generally finds himself under the necessity to provide accommodation for the wounded in rooms not at all suitable for the purpose. In order, therefore, to prevent pyæmia and hospital gangrene under such circumstances, the surgeon ought to prescribe the air-bath, that is, to order the wounded to be placed in the open air under linen tents.

Delpech, the great French surgeon, did not recommend the air-bath so strongly as Brugmanns, who was the first to employ it; but he erred in employing the air-bath alone, without other remedies, for the cure of hospital gangrene. According to Professor Jüngken, there is no specific remedy for this obstinate and dangerous affection, which could, exclusive of all others, effect a complete cure. Not even the actual cautery is able to do this, although it is the most powerful of all remedies offered to us for combating this affection; but even if we cauterize a gangrenous wound as deeply as possible, and the patient is still left in a contaminated atmosphere, the ulcer will again present a gangrenous aspect as soon as the eschar has come away.

The air-bath is just as important in pyæmia as it is in hospital gangrene, especially if it is possible to place the patient under trees in full leaf, the exhalations of which are known to have a beneficial effect. In many desperate cases of pyæmia and nosocomial gangrene, where every means had been employed in vain, and the patients seemed past hope, an immediate change for the better was perceived after Professor Jüngken had ordered them to be taken out of the surgical wards of the Charité Hospital, into the gardens adjoining this institution, where they were placed on a simple couch, covered with a blanket, and left in the open air for the rest of the day. Other remedies which had until then been employed in vain now took effect, and the Professor thus succeeded in saving wounded persons who must otherwise have certainly perished.

Professor Jüngken found a striking confirmation of these views during the revolution in Dresden, when a sanguinary struggle took place between the insurgents and the soldiers. Many of those wounded on this occasion were brought into the palace belonging to Count Marcolini, in which the saloons are furnished with very large windows, reaching to the bottom, and which looked upon a beautiful garden filled with splendid old lime-trees. Whenever the weather permitted, those most dangerously wounded were carried on their beds into the garden, and spent the whole day under the trees. The results were strikingly favourable. It is, after all, better that the patient should shiver a little in a cold but pure air, than that he should die in a warm but poisoned atmosphere.

It is also of great importance to prevent any intercourse between those affected with hospital gangrene and others. The bandages and instruments which have been employed for gangrenous wounds ought not, if possible, to be employed a second time, as the severity of the sufferings is thereby increased in those already affected, and others may receive the contagion in this way. Bandages, linen, or clothing, etc., should not be kept in rooms where patients so infected lie, neither should lint, etc., be prepared there. A frequent change of the bedding, blankets, and linen of such patients is also of the greatest utility.

Among the large number of local remedies which have from time to time been recommended for hospital gangrene, the more effective are perchloride of iron, the acidum pyro-lignosum, chloride of lime, hydrochloric acid, carbon powder with chloride of zinc, myrrh and camphor (℞. Carb. lign. pil. ℥; myrrh ʒj; camph. ras. ʒss; zinc. chlo. gr. v. in f. pulv.), and chloride of zinc in solution. Of all the other remedies little or nothing is to be expected. But the medicines just mentioned have not the same effect at all times. There are periods in which chloride of lime is particularly effective, and when no other remedial agents will answer the purpose; at other periods chloride of lime entirely fails, and carbon powder or acidum pyro-lignosum produce good results, so that it is probable that, in spite of the similarity and even apparent identity of symptoms observed, there must be some peculiar differences in the several epidemics of hospital gangrene, which are at present only to be recognized by the success and failure of certain remedies.

There is only one remedy for this terrible disease, which never fails the surgeon, provided it is properly used, and that the other circumstances, such as light, air, etc., are favourable: this is the actual cautery, which has of late been unjustifiably neglected, but is believed by Professor Jüngken to be the only certain and reliable means for destroying the peculiar and dangerous contagion of hospital gangrene. To neglect the actual cautery under such circumstances, is not only to do harm to the infected patients, but also to those not yet attacked, as the contagion will then no doubt spread further, and become more dangerous. The surgeon ought to be the readier to employ the actual cautery, as the patient may be put under the influence of chloroform, and thus be spared much suffering during the operation. To render this effective, the iron must be brought to white incandescence, in order that the most intense heat may be applied to the gangrenous surface; otherwise the operation is useless. It must also be applied at an early period, if possible, at the commencement of the epidemic, in order to destroy the evil in the germ. If, however, the gangrene has become strongly developed, the whole surface of the wound must, previous to the cauterization, be laid bare, sinuosities and canals must be carefully divided, larger mortified parts must be removed by means of the scissors or the knife, the surface must be cleaned of all detritus, and dried by lint or sponges, so that the cautery may act upon a clean and dry surface. It must be applied especially to the edges of the ulcer, and beyond the diseased parts, in order to produce plastic reaction. Afterwards the patient must not remain in the room in which he was before; but he ought to be transferred either into the open air or in a single room, where doors and windows are open by night and day; and the bed ought to stand as close as possible to the window, even during the night, and whether the season be rough or not. The elimination of the eschars ought to be left to nature, and should not be promoted by warm fomentations or cataplasms, which relax the parts and thus favour relapses. The eschars will then come off a little later, but we have, on the other hand, the advantage of a stronger reaction, a better suppuration and formation of granulations. Gentle irritants should afterwards be applied to the surface of the ulcer.

The local applications ought to be accompanied with a suitable dietetic and pharmaceutical treatment. The strength of the patient must be kept up, and no mercury be given, the bowels being kept open by mild aperients. By strictly adhering to these rules, Professor Jüngken has for a number of years succeeded in keeping the surgical wards of the Charité Hospital, which were formerly a hot-bed of hospital gangrene, free from this terrible scourge.—*Medical Times and Gazette*, November 2, 1861.

40. *Traumatic Tetanus successfully treated by Tincture of Aconite.*—Dr. E. Woakes relates (*British Medical Journal*, October 26, 1861) the following example of this:—

A. L——, aged 10, on the afternoon of March 6, 1860, having placed his hand over the muzzle of a gun, not knowing it was loaded, to "feel the wind" from the explosion of a cap, received the charge in the palm of the right hand, through which it passed into his face; one or more shots penetrated the left eye. Each of the metacarpal bones of the right hand was shattered, and the first row of the carpus exposed. The flexor tendons were much torn, and the palmar arches destroyed; nevertheless, it was resolved to save as much as possible of the hand, the thumb being intact. The second finger only was amputated at the carpus; all loose splinters of bone were removed; and the ragged ends of tendon, etc., were cut away. When the edges of the wound were adjusted and secured by sutures, the hand presented a compact and promising appearance. It was supported on a splint, and cold water applied.

For the following three days, he went on well; the swelling of the face, from the numerous shot wounds, was subsiding, though the left eyelids were closed and the eye painful.

March 10. Last evening about 9 P. M., he began to complain of slight intermitting pains in the injured limb. In the night he had crampy pains in the legs. At 3 A. M., the legs were drawn violently backwards in a succession of jerks. At 7 P. M., when I saw him, there were dysphagia and trismus; the teeth could not be forced more than half an inch apart; but there was no risus. He was sleepless; the pulse hard, 110; the bowels open. I prescribed two-thirds of a minim of tincture of root of aconite (prepared by Battley and Watts) to be taken every hour in a drachm of water; and three ounces of brandy during the day. The wound at the back of the hand had a sloughy appearance and was poulticed.

At 9 A. M., he took the first dose, and shortly afterwards expressed himself as much relieved. He experienced several other opisthotonic seizures during the day, but much less severe in character. After about four doses of aconite the pulse fell to 96, and was much softer.

11*th*. He had more spasms during the night, but the trismus had entirely disappeared. At 11 A. M., he had slept four hours; during which time he had had frequent slight spasms; he was comparatively free from them when awake. Pulse 92, firm. He was ordered to have a minim of the tincture of aconite every hour, and, during the day, two pints of milk, six ounces of wine (instead of brandy), and three eggs. The wound having improved in appearance, warm water dressing was substituted for the poultice, and from this date granulation progressed steadily.

12*th*. He slept five hours during the night, though, when asleep, slight spasmodic snatches occurred about every quarter of an hour. At 7 P. M., he had a severe attack of spasm, chiefly in the right arm. He says the cramps were easier the oftener he took the medicine, which he now did every half hour when in pain. Pulse 100, small.

13*th*. The bowels were confined. He had not so good a night, having much crampy pain. The dose of aconite was increased to a minim and a half; and the bowels were freely opened by a purge of calomel and jalap.

14*th*. He slept but little during the night, but has had no cramp since the bowels were relieved yesterday. He was ordered to take the aconite every second hour. At 1 P. M., he became suddenly faint, and a succession of fainting fits occurred, lasting about an hour and a half. The aconite was repeated by his attendants; it, however, only increased the symptoms; and at 3 P. M., when he was seen, his breath was laboured and slow, and he had lost all power in the sound arm. He soon revived on taking a quantity of brandy, and the aconite was now entirely discontinued.

From this time, he progressed slowly towards recovery. The left eye was lost from suppurative inflammation, the result of the shot-wounds, and is now collapsed. The hand made a good cure; and the result both in an æsthetical and practical point of view fully justifies the attempt made to save it.

Remarks.—The following remarks have been suggested during the progress of this and several other cases which have fallen under my observation. Apart from any pathological consideration, the undoubted tendency of tetanus is to wear out the vital energies of the system, while, at the same time, the disease itself runs on to its own termination; so that, as far as the issue of the case is concerned, the simple question to be decided is, which of the two shall be first exhausted, the malady or the patient. This appears to be the clinical teaching of tetanus; and its recognition will, I think, help us not a little in treating the disease. The principle just stated furnishes us with two indications: namely, to subdue the spasms if possible, but especially to obviate the tendency to death by asthenia, by sustaining the failing powers of the sufferer. Aconite, from its known effect in controlling muscular action and allaying pain, would seem, *à priori*, to be admirably adapted for fulfilling the first indication. It is not necessary to suppose that it exerts any specific antagonism to the *materies morbi* of tetanus; its beneficial effect is sufficiently explicable on the ground of its establishing an exactly opposite physiological condition—one, that is, of muscular repose; while its anodyne influence is undoubtedly advantageous. It is not sufficient simply to allay pain by narcotizing the patient; for, in all the cases I have seen, the tetanic spasms were augmented during sleep, whether this were natural or the result of opiates. And the explanation of this fact appears to be, that, the regulating and controlling powers of the brain being in abeyance, as they are during sleep, the morbidly excited spinal system is free to exercise its fullest effect.

By its restraining muscular effort, therefore, and by its anodyne properties, aconite removes or checks the symptoms, the severity or long continuance of which induces that state of asthenia so jeopardizing to the patient; and by so doing, allows of the administration of such stimulating and nourishing agents as may be thought desirable. This was well instanced in the case just detailed; the difficulty of swallowing—one of the most tiresome complications of tetanus—ceasing entirely after a few doses of the remedy. The lowering effect of aconite on the pulse was also remarkable, notwithstanding the constant administration of stimuli; though this, I believe, is a phenomenon which constantly attends the taking of aconite. Another point worthy of note, which involves also a caution, is that symptoms of poisoning by aconite ensued on the fifth day from the commencement of the drug, such as loss of power in the arms, great prostration, etc., which the friends mistaking for a continuance of the tetanic symptoms, unadvisedly repeated the medicine. The tolerance of the drug which tetanus undoubtedly causes, ceased now that the disease itself was subdued, and the usual effects of aconite in the system were becoming manifest. Fortunately, they yielded to a free use of stimulants.

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41. *Abortive Treatment of Gonorrhœa and its Consequences.* By Dr. MALLEZ.—It is to Carmichael in the first place, and then to Debeney and Ricord, that the abortive treatment of gonorrhœa has owed its vogue, and, indeed, it may be said that it has only been extensively practised by the two last-mentioned practitioners. But after having been pretty frequently had recourse to during several years, this method seems to be becoming gradually less employed; and if we look for the reason of this change, we find facts to explain, and authorities to justify it.

By taking care to question patients affected with gonorrhœa regarding the treatment which was employed in former attacks of the disease, we in no long time obtain elements to lead us to a judgment regarding the value of the different methods of cure which have been proposed for this affection. The abortive method, by strong caustic injections, has particularly engaged my attention for some time past, and I have collected a certain number of cases in which the result has been unfavourable.

The first is that of M. E. F., twenty-five years of age, of a lymphatic temperament and a weak constitution, who contracted an acute gonorrhœa in the early part of 1860; an injection, consisting of a drachm of nitrate of silver in an ounce and a half of distilled water, was prescribed for him by an American surgeon. After intense suffering, followed by convulsions, the patient had an attack of

hæmaturia, followed by dysuria, the result of a real inflammatory stricture, and a perineal abscess supervened. It was opened by means of Vienna paste, and fortunately closed up without leaving a fistula. Since that time the urethral discharge has continued unabated, in spite of all the means which have been had recourse to; balsamic preparations, specifics of all kinds, astringents, injections, tonics, etc., have proved powerless against this gonorrhœa, and at present there can be recognized on the level of the bulb a stricture for which the patient is under treatment.

A second case bears the closest analogy with the above, and only differs from it in the fact that the patient escaped a perineal abscess.

In six other cases, of which two are still under treatment, the patients have experienced the same pain from the injection of fifteen grains of the nitrate in an ounce of water. The gonorrhœal discharge continues rebellious to all treatment, and three of them have already confirmed strictures of the urethra.

The dose of the nitrate employed in the first of these cases will be acknowledged by all to have been too large; but in the other seven cases the injection employed was that recommended by Ricord, by Debeney, and by various other writers. In two cases the injection was practised by a surgeon, and the *modus faciendi*, to which much importance has been attached, was conformable to all the rules.

The original idea of the method, substitution, is of difficult application, and this appears to be often forgotten when the injection is invariably made of the strength of 1 to 30. In this respect M. Debeney is more judicious; he has no fixed strength for his injection; and after having washed the mucous membrane by means of tepid injections, he proportions the quantity of caustic to the degree of inflammation, according to a scale which practice alone enables him to draw up. In weak doses the injection ceases to be abortive—it becomes merely a modifier of the condition of the mucous membrane of the urethra. It will readily be understood that, following the doctrine of Ricord's school, which considers gonorrhœa as a non-specific inflammation, we may readily be led to endeavour to displace it violently by a therapeutic substitution; besides, it must be confessed, the method is one as tempting to the surgeon as to the patient. If I have been led to abandon it, it is because, while real success is sometimes obtained, this method offers numerous disadvantages and well-authenticated cases of failure.

The excessive pain, carried, as in the patient first mentioned, even to convulsions, hæmaturia, dysuria—which may even go the length of retention—perineal abscesses, urinary fistula, as in a case cited by Dr. Beyran, and in another which occurred to Dr. Cullerier, all these are unfortunately too frequent, and we are surprised to see their occurrence denied by practitioners of talent. But what is of even more importance for the surgeon to be aware of than the occasional bad results, is the mode of action of the caustic injection. The inflammation of the urethral mucous membrane which we do not succeed in displacing seems to take refuge in the submucous tissue; and when we examine a urethra in which a caustic injection has been practised, we obtain the impression of a hard, resisting cord, and we look in vain for the natural suppleness and elasticity. The walls have increased in thickness, the neighbouring tissues which the inflammation has attacked are incorporated with the urethra, and it is at some point in their extent that the localized pathological process will mark the place of a stricture. Such is the opinion of all those who are called in the course of their practice to see the termination of urethral discharges. It is that of Dr. Phillips, who attributes to the abortive method a great share in the production of strictures. It is also that of MM. Cullerier and Beyran, and it has become mine, without, however, preventing me from admitting that the nitrate of silver, suitably employed, is an excellent modifier of certain conditions of the urethral mucous membrane.—*Edin. Med. Journ.*, Sept. 1861, from *Gaz. des Hôpitaux*, 6th August, 1861.

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42. *Injections of Liquor Hydrargyri Pernitratis in Gonorrhœa.*—Mr. G. Borlase Childs speaks (*Lancet*, October 12, 1861), in the most unqualified praise, of the efficacy of injections of the liquor hydrargyri pernitratis in gonor-

rhœa. He uses half a minim of the salt to an ounce of water, to be used three times a day. Six injections sometimes effect a cure, whilst in others the treatment rarely exceeds ten days. No other remedy is employed, except a saline aperient at first, reliance being solely on the liquor hydrargyri nitratis.

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43. *Burns.*—Mr. F. C. SKEY advocates the stimulating treatment of burns first suggested by Dr. Kentish. "In July last," he states, "five men were admitted into St. Bartholomew's Hospital, with severe burns on the face, head, chest, and arms. One died immediately after his arrival. My house-surgeon, Mr. Richard Smith, was at the time ill, and the immediate charge of these cases devolved on a colleague, who applied the oil and lime-water to the arms and hands of each of the surviving men. At that moment Mr. Smith arrived, and completed the dressing by the application of a solution of nitrate of silver (ten or twelve grains to the ounce of water) to the face, neck, &c. I did not see these men till the following morning, when all four complained of severe burning pain in the arms and hands, but stated they were free from pain in the other affected parts. The stimulating solution above mentioned was applied to the upper extremities, and the relief at the expiration of about a quarter of an hour was complete. In two of the cases some pain returned on the third day, and relief was obtained by the same means. My directions are simply these: In the case of infants or young children, wash the affected surface, if not very extensive, with a solution of nitrate of silver, in strength six or eight grains to the ounce, and immediately cover up the part with a thick mass of cotton wool; in the case of an adult, from twelve to fifteen grains, unless the surface requiring the application be very large. Should pain return, the solution may be advantageously resorted to at any early stage of the treatment."—*Lancet*, Oct. 5, 1861.

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44. *Incontinence of Urine in consequence of a Burn.*—A child, aged 7 years, was brought before M. NÉLATON at the Hôpital des Cliniques. Some years previously, it had been burned in the gluteal region, perineum, and the upper part of the thighs; and had since suffered from incontinence of feces. M. Nélaton observed that he had seen several cases of this kind, and gave the following explanation of them. If, in such a case, a close examination be made, an orifice is discovered, the integument of which presents a different character from that of the normal anus; it is a hole in the centre of a cicatrix, and has four resisting edges. When the finger is introduced, the opening is found to be inert, and the finger passes into a cavity of greater or less size, containing fecal matter. This cavity is not the rectum, but an accidental vestibule; and the true anus, with its sphincter, is found lying above the apparent one. M. Nélaton supposes that the ampullary dilatation is the result of the drawing down of the mucous membrane of the rectum by the cicatrix; and that, when the feces are expelled by the normal action of the rectum, a portion remains in the dilatation below the sphincter ani, and involuntarily passes off from time to time. The treatment recommended is to lay open the false anus, so as to prevent the accumulation, care being taken in the after-treatment to prevent the re-formation of a troublesome cicatrix.—*British Medical Journal*, October 19, from *Journ. de Méd. et de Chir. Prat.*, August, 1861.

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45. *Shortening after Fractures of the Thigh.*—M. VELPEAU, while exhibiting a patient to his class in whom this was somewhat markedly observable, pointed out the fact that, nevertheless, there was no lameness: and the absence of this in so many cases of shortening after fracture of the femur, he observed, led him to look with little favour upon the numerous apparatus for producing extension and counter-extension in fracture of the thigh, with a view of preventing shortening. In fracture of the leg, where such apparatus is never resorted to, considerable shortening is unattended with lameness. The compensatory curvature of the spinal column, and the inclination of the pelvis towards the short limb, gradually meet the inconvenience. The most simple form of apparatus, and the attentive surveillance of the surgeon, will keep the shortening within moderate

limits, and then this will not be found to be accompanied by lameness.—*Med. Times and Gaz.*, Nov. 30, from *Gaz. des Hôpitaux*, No. 101.

46. *Dislocation of the Femur downwards and forwards, or under the Arch of the Pubes.*—Dr. E. W. Hodder, surgeon to the Toronto Hospital, records (*British American Journal*, March, 1861) a case of this very rare if not unique dislocation. The subject of it was a muscular man, æt. 22, upon whom a mass of earth fell whilst engaged in excavating a bank, at 6 P. M., Jan. 15, 1855. He was first struck on the shoulders, by which he was knocked down, and a large quantity of the earth afterwards fell upon his loins and upper part of his thigh whilst he was attempting to escape. He was brought to the hospital an hour after the accident. He then complained of great pain in the right thigh and in the region of the right hip-joint. The singular position of the limb at once attracted Dr. H.'s attention, and on making a very careful examination, "it was found that the head of the femur had been thrown downwards and inwards, completely under the arch of the pubes, the neck of the bone resting on the ramus of the pubis immediately below the origin of the gracilis muscle, and either between or through the origins of the adductors.

"When supported in the upright position, the thigh formed very nearly a right angle with the trunk, the knee being as high as the head of the bone, the leg was at a right angle with the thigh, the knee turned very much outwards, the toes turned slightly outwards and pointed downwards. When he was allowed to place himself in the position which gave him the least pain whilst standing on the sound limb, the trunk became much bent forward, the knee consequently less raised. The trochanter major could scarcely be felt, but was anterior and much below its normal position, and thrown inwards towards the mesian line of the body. One of the most striking symptoms in the case, was a remarkable concavity below the dorsum ilii, caused by the absence of the great trochanter, and by the gluteus maximus, as well as the medius and minimus, being put so much upon the stretch as to render the bodies of these muscles quite flat, instead of presenting their ordinary rounded form.

"On examining the perineum and tracing the ramus of the ischium from the tuberosity upwards, a firm round projection could be felt at about the junction of the ischium and pubis. This projection was anterior to and rested upon the ramus of the ischium, and it was found to move when the leg was rotated together with the trochanter. The psoas and iliacus muscles could also be felt very much upon the stretch.

"When the patient was examined in the recumbent position the thigh was less flexed upon the abdomen, but it was more turned outwards than in the upright position. On measuring from the anterior-superior spinous process of the ilium to the upper edge of the patella, the length of the two limbs was nearly the same, the injured leg, if anything, being the longest, but the distance from the same point of the ilium to the trochanter on the two sides, showed a remarkable difference, the trochanter of the injured limb being fully two inches further removed, and to the inner and under side."

The next day at noon, the symptoms remaining nearly the same, the reduction was determined on.

"The man was placed upon a table in the recumbent position; chloroform was then administered until perfect anæsthesia was produced. A strong belt was passed round the pelvis, on the same plane as the body, for counter extension, and the pulleys were applied at nearly right angles to the vertical plane of the body, but a little inclined downwards; a round towel was also used for the purpose of dislodging the head of the femur from under the ramus of the ischium and pubis. Extension was now commenced and cautiously continued for some minutes, the muscles being extremely tense and rigid.

"The ankle was grasped by an assistant and the leg drawn towards the mesian plane. After the extension had been continued for about fifteen or twenty minutes, and the round towel used to dislodge the head of the bone, a hard grating sound was heard, followed by an indistinct snap. The force was immediately relaxed and a careful examination again made, when it was found that the head of the femur now no longer occupied the former situation under the

pubes, but that the accident had been converted into a dislocation into the foramen ovale presenting all the characteristics.

"The pelvis strap and pulleys were again readjusted, but the direction of the force was now more upwards and outwards, the ankle held by the assistant was drawn under the other and at the same time rotated, and in a few minutes the head of the bone was felt to move, and almost immediately afterwards slipped into the cotyloid cavity, with the same grating sound as when it was dislodged from under the arch of the pubes. This sound more resembled that produced by the laceration of muscular and tendinous structures than the clear snap generally heard on the reduction of a dislocated bone.

"The force required was considerable, but the patient was well under the influence of chloroform during the whole time, except at the close; and when the luxation was reduced he immediately exclaimed that the bone was in its right place and expressed himself greatly relieved.

"His legs were bound together and he was placed in bed. From this time until the 5th day of February not a single bad symptom presented itself; he gradually recovered the use of his limb, and on the day of his discharge (5th Feb.) he was able to walk very well with the use of a stick."

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47. *Dislocation of the Head of the Femur into the Obturator Foramen, with Preservation of the Movements of the Bone.*—Professor SÉDILLOT, of Strasburg, has communicated a highly interesting paper to the French Academy of Sciences, on the subject of the immediate preservation of the movements of the inferior extremity in cases of accidental displacement of the head of the femur into the obturator or thyroid foramen. The difficulty or absolute impossibility of the movements of the limb has invariably been considered as the most constant symptom of recent dislocations, especially in diarthrodial joints. It seems indeed difficult to imagine how a bone extruded by some violent effort from its articular cavity, an injury necessarily involving laceration of the ligaments, muscular tension, and changes in the natural position and direction of the limb, can possibly still allow of motion, so painless and extensive as not to interfere materially with the functions of the extremity. Surgeons, therefore, have neither surmised nor admitted that a patient, suffering from dislocation, may uninterruptedly pursue his usual avocations as if he had merely undergone some slight contusion. Instances of the kind exist, however, and are deserving of notice, inasmuch as they may induce a dangerous degree of security, and lead to disastrous errors of diagnosis.

This is the object of M. Sédillot's paper, and, in support of his views, the author adduces several cases of luxation of the femur forward and downward, in which the patients were nevertheless able to walk immediately after the occurrence of the accident, and to exercise as usual, without much pain or lameness. It is, moreover, for the purpose of cautioning the practitioner against an error which might readily be fallen into in such cases, that M. Sédillot enlarges on these circumstances which have not hitherto been pointed out. When the attention of the observer is led astray by the absence of any marked difficulty of locomotion, the gravity of the injury may easily escape detection, and a minute examination of the relative changes of situation of the pelvis and femur may appear unnecessary in consequence of the apparent unimportance of the symptoms. The persistency of the movements and functions of the limb, says M. Sédillot, is accounted for by the fulcrum afforded to the head of the femur by the depth and shape of the margin of the obturator foramen. Despite the immediate and spontaneous restoration of the power of using the extremity for the purposes of progression, the leading features of the displacement are nevertheless perfectly discernible, as may be seen in the instance of a young soldier who was admitted into the hospital of Strasburg for a lameness of obscure origin, which had even been suspected of being simulated. M. Sédillot relates the case as follows:—

Case. G. P——, æt. 18, a private in the 4th rifles, fell while in a boat, on the 6th of October, 1860, but was unable to give any account of the circumstances which accompanied his fall. The patient continued to walk, but observed, three

days after the accident, that his right leg and thigh were slightly turned out, so as to induce a certain amount of lameness.

He was admitted into the hospital on the 22d of October, 1860, when his condition is described as follows:—

1. The right thigh and leg were slightly everted.
2. The anterior and superior spine of the ilium was found to be three lines lower than the same process on the opposite side.
3. The lateral breadth of the hips from the mesial line running along the trochanter major was seven inches on the left side, and six only on the right.
4. The distance from the mesial line of the body to the summit of the trochanter was seven inches and three lines on the left side, and ten inches on the right. (The lowering of the right side of the pelvis and the elongation of the limb must here be recollected.)
5. From the anterior and superior spine of the ilium to the summit of the patella, seventeen inches on the left side, and eighteen inches and a half on the right.
6. The circumference of the upper part of both thighs was the same, viz., eighteen inches and three-quarters.
7. Marked flattening of the right, and prominence of the left, trochanter.
8. The apparent elongation of the right leg was twenty-two lines.
9. In walking the right leg and thigh were turned outwards.
10. The right trochanter appeared to have sunk in; the furrow below the right buttock was lowered.
11. Abduction of the limb was perfectly unobstructed. But the right thigh could be brought into a line with the axis of the body when only the foot was everted.
12. The right foot could by no effort be turned inward.
13. In abduction the right thigh could be bent, but not in adduction.
14. The movements of adduction, and especially of abduction of the left leg, were singularly extensive.

Reduction.—The patient, who had taken chloroform, was laid horizontally on the uninjured side, and, for the purpose of extension, a sheet folded lengthwise was passed under the perineum, and its two ends, carried one in front and the other at the back of the pelvis, were twisted and secured; coaptation and counter-extension were performed by bending the leg and thigh, imparting a rotatory motion to the head of the bone, and finally by bringing it into adduction and rotation inwards; reduction was thus effected twenty days after the accident.

The natural shape and dimensions of the limb were entirely restored.

For six days the patient remained in bed, the right limb secured in extension and adduction, and attached to the left by a roller above the knees and malleoli.

P—— was allowed to rise on the seventh day. He perceived no lameness, and three weeks after he left the hospital to join his regiment.

M. Sédillot's cases tend to show that the displacement of the head of the femur into the obturator foramen, when the movements are preserved, is characterized by an elongation of the limb of from five to fifteen lines, a symptom which is rendered more evident by the lowering of the hip-joint on the diseased side; the outward rotation of the extremity and the abduction of the foot; the prominence formed by the head of the bone in the vicinity of the pubes, and the depression existing in the spot it should naturally occupy; the impossibility of bending the thigh in adduction, and the ease with which this is accomplished when the limb is in abduction. Reduction is seldom difficult, even when the dislocation is of several weeks' standing, and is effected by traction outward of the upper part of the thigh, the knee being turned inward and forward, and placed in adduction when the head of the bone is supposed to be on a level with the acetabulum. In order to obviate a relapse, the only precaution necessary is to keep the injured extremity extended and turned slightly inward. The cure is rapid and complete. When the parts have not been replaced in their proper position, the bones adapt themselves to each other, and the patients are frequently enabled to use the limb, remaining, however, affected with permanent lameness.—*Ranking's Abstract*, vol. xxxiii., from *Journ. Pract. Med. and Surg.*, March, 1861.

48. *Lumbar Hernia.*—Dr. CHAPPLAIN, of Marseilles, describes a case of this rare affection, which has been mentioned by J. L. Petit and by a few other surgeons. A man, aged 60, was jammed between the shaft of a cart and a wall. He had, in the right lumbar region, immediately above the crest of the ilium and below the last rib, a longitudinal furrow, into which the skin was drawn so as to form a kind of purse; and at the bottom of this, the hand felt a depression. This was when he was lying in bed; but when he stood up, the place of the depression at the bottom of the furrow was occupied by a large tumour. This tumour lay between the crest of the ilium and the last rib; it was of oval form, having a horizontal diameter of about three inches, and a vertical diameter of about two inches and a quarter. The colour of the skin was not changed. If the tumour was examined when it was prominent, a fluctuation resembling that of a cold abscess was felt. But when pressure was applied, so as to put back the tumour, it was reduced with a gurgling sound. When the pressure was removed, the tumour reappeared; and it was increased by coughing. M. Chapplain points out the necessity of not mistaking the tumour in such a case for a cold abscess. The lumbar hernia may be produced, he thinks, by physical injury in persons in whom there is a deficiency in the muscular walls of the part.—*British Medical Journal*, Oct. 19, from *Presse Méd. Belge*, Sept. 8, 1861.

49. *Cancer in Muscular Tissue.*—Dr. PARMENTIER has written an article for the purpose of calling attention to the occasional original development of cancer in the substance of muscles; this being entirely distinct from the effects produced on them by cancer originating in neighbouring parts. He relates a case of cancer developed in the substance of the rectus femoris; one of cancer (infiltrated) in the gluteus maximus; and one of fibro-plastic tumour of the pectoralis major. He also gives brief notices of cases described by Warren, Bérard, and Broca. Broca, Vidal, and Gueneau de Mussy, have observed cases in which cancerous masses were disseminated through many parts of the muscular structure; and Dr. Parmentier says that the development of cancer in muscles is often a sign of a high degree of cancerous cachexia. The cancer is generally developed in the form of one or more tumours in the substance of the muscle, which push aside the fibres, rendering them more or less pale and atrophied. But there is a form of cancerous disease of muscle which has been described by Mr. Cruveilhier, that bears some analogy to a form of fatty degeneration; inasmuch, as the cancerous deposit (in M. Cruveilhier's case) was deposited in fasciculi; which exactly resembled the muscular fasciculi; the proper substance of the muscle having gradually degenerated from the cancerous matter being deposited alongside of the fibres. In this case, all the muscles of the arm were affected. The symptoms of cancer of muscles, in the ordinary form, are the following: There is, at first, a tumour, of the size of a pea, hard, movable, and yet adherent to the muscle. It may exist a long time without causing inconvenience. At length, however, it becomes as large as a pigeon's or hen's egg, is soft, elastic, and movable when the muscle is relaxed, but fixed when the muscle is contracted. If the tumour have its origin in the part of the muscle in relation with the skin and subcutaneous cellular tissue, no depression is produced in the part when the muscle contracts; but if it be seated in the centre or the deeper part of the muscle, then, during contraction, the muscular fibres press in front of the tumour like a band, and there is some flattening over the part. If the tumour be not soon removed, it rapidly increases in size, and, passing beyond the muscle, may affect the neighbouring parts. Pain may not be felt for a long time—until, in fact, the tumour has begun to affect the skin. The cancerous tumour of muscle has to be diagnosed from syphilitic tumours of muscle, hydatid tumours, and some forms of cold abscess. An exploratory puncture before the removal of the tumour is proceeded with will detect abscesses or hydatids. Syphilitic tumours begin with a local circumscribed puffiness, arising from effusion of plastic lymph between some of the muscular fasciculi; this effused matter then becomes softened. If acute inflammation set in, or if the tumour be painful at the first, pus is formed, and the muscular fibres are softened and destroyed. In other cases, the syphilitic tumours become hard. They are readily removed by iodide of

potassium. Cancer is very liable to return in muscles after removal.—*British Medical Journal*, October 19, from *L'Union Médicale*, 22d and 29th Aug. 1861.

50. *Is Inherited Syphilis Protective against Subsequent Contagion?* By Jonathan Hutchinson, Esq., Ass. Surg. London Hospital, &c.—It is now generally admitted that a man who has once had an indurated chancre, and the usual *rôle* of secondary symptoms, is not susceptible of a subsequent contagion. In this respect, as in many others, true syphilis resembles the exanthems. The latter, however, although they protect the individual, do not protect his offspring, unless, possibly, in those cases where a pregnant woman is the patient. Now, syphilis chiefly differs from those diseases usually classed as exanthems in that all its stages are very protracted. Time is thus afforded for the offspring to suffer as well as the parent. It becomes, therefore, a very interesting question as to how far an inherited taint is protective against subsequent contagion. As far as I am aware, no attempt has yet been made to find an answer to it, and in the hope of drawing attention to the matter, I record the following three cases. They are the only facts bearing upon it which have as yet come under my notice, although I have been carefully seeking such for some years:—

Case I. *Heredito-syphilis with clear history; Gonorrhœa and Superficial Sores; No Secondary Symptoms.*—Richard D., a lad of 19, had been under my observation for several years on account of nodes, keratitis, etc., the results of inherited taint. His mother was also under treatment for tertiary symptoms, and gave me a clear history. The boy had suffered severely in infancy. At length (1858), he one day applied at the hospital on account of gonorrhœa and superficial sores, with much swelling of the prepuce. None of the sores became indurated. He was treated solely by local remedies; and no secondary symptoms occurred. He was under my care at the Metropolitan Free Hospital. I have frequently seen him during the last two years, and am certain that he has not had any constitutional symptoms.

Case II. *Heredito-Syphilis; Acquired Syphilis; Several Non-Indurated Sores with Suppurated Bubo; No Constitutional Symptoms.*—Edwin W., aged 20, came under my care at the London Hospital in 1859, on account of primary sores. There was a large ulcer which had destroyed the frænum, and several small circular ones on the surface of the glans, and on the roll of the prepuce close to the corona. None of the sores were indurated. In the right groin was an ulcerated bubo with livid undermined edges. He had had the sores for nearly two months, and had taken mercury. There were no constitutional symptoms. The interest of his case belonged to the circumstance that he was evidently the subject of inherited taint in a severe form. He had suffered from interstitial keratitis in both eyes, and both corneæ were still hazy. The right iris was adherent at its pupillary edge, and this eye had, he said, been defective from infancy. The keratitis occurred when he was ten years old. His teeth presented the typical malformation; his nose was flattened, and large radiating cicatrices extended from the angles of his mouth. He stated that he was the oldest living in his family. A sister who was older died of consumption at the age of 21; she had always been ailing, and had suffered for long from "bad eyes." A brother a year younger than himself is now the subject of "bad eyes," and under care at Moorfields. I had this patient under observation for several weeks, during which he got nearly well of the local disease. No constitutional symptoms occurred.

Case III. *Heredito-Syphilitic Diathesis well marked; Primary Syphilis acquired at Adult Age; Mercurial Treatment; No Constitutional Symptoms.*—In the following case the patient, besides being the subject of inherited syphilis, had also suffered from the acquired disease. It did not appear, however, that he had had any true constitutional symptoms from the latter; and the history made it clear that the attacks of inflammation of the eyes were dependent upon the inherited taint, rather than the acquired one. As he was not under my care during the primary disease, I am unable to state the exact nature of the sore.

William B., aged 26, was admitted under my care at Moorfields early in the present year. His aspect, teeth, etc., were most characteristic. The bridge of

his nose was flattened down, and had been so since boyhood. There were large fissures running from the angles of his mouth. The face was pitted; the upper incisors narrow and notched. His sight had been imperfect since early boyhood; the first inflammation, his mother told him, being at the age of four years. With the right eye he had never been able to see much.

The right cornea was hazy; the iris dull; and the pupil much notched by adhesions. The other eye had been the better one until the attack of inflammation, for which he came under my care; but in this, too, there had always been a corneal haze. He had, when I saw him, an acute ulcer on the outer part of the eye, attended by hypopyon. Under atropine the right pupil dilated widely, but with some notches; the other also dilated well. It was not practicable to illuminate his fundus at all well. The vitreous body appeared to contain floating films; and there were large and numerous black dots on the choroid.

The history of his acquired syphilis was as follows: Five years ago he attended the Lock Hospital for two months. He had then "clap and chancres," "a bubo formed and broke." After this, and during his attendance, he had a rash on one leg. He took pills night and morning for a month or two, and was salivated. After ceasing to attend he had no further symptoms. Two years ago he had gonorrhœa again, and was salivated by a chemist. He subsequently married; and his first child was born a few months before he came under my care. I was very anxious to see his infant, but my curiosity did not seem agreeable to him; and I could not press the matter. I have as yet had but few opportunities of seeing the offspring of heredito-syphilitic patients.

Remarks.—It will be seen that in none of these cases did the patients suffer from constitutional symptoms. In none is there any proof that the sores were of the indurated type, and in the first two it is certain they were not. As far as they go, they favour the belief that hereditary syphilis, if severe, is protective against subsequent contagion, and that its subjects are not liable to contract the indurated form of chancre.—*Brit. Med. Journ.*, Sept. 21, 1861.

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51. *On Double Amputations, performed simultaneously or immediately following each other.*—J. F. HEYFELDER relates several cases in which double amputation was unfortunately necessary. In such cases the severity of the injuries sustained is so great, that they would probably terminate fatally without operation.

"Scarcely any cases," says Heyfelder, "can be produced in which patients have been saved, both of whose thighs have been amputated, *coup sur coup*, for gunshot injuries of both legs or both knee-joints." On this account, Boyer, Velpeau, and Vidal declare that the amputation of both hands or both feet is at the most permissible.

If it has been shown that the prognosis of double amputations of the lower extremities, *for injuries*, whether of the thigh or leg, is exceedingly unfavourable, Heyfelder thinks that the case assumes a different form when the double amputation is necessitated by an *organic disease*, instead of by an injury, and when an interval of five or six days elapses between the time of the first and the second operation. Thus, he twice performed successfully double amputation of both legs for frostbite, with an interval of five days. He does not lay down definite rules for double amputations, when they should be performed, simultaneously or at intervals. But he objects to the proceeding instanced by Fergusson, in which, at the same moment, both limbs are removed by two surgeons. One operator would be in the way of the other, and the measure is only justifiable during and after great battles. Heyfelder now holds a similar opinion regarding all, in some measure, important operations. In squint and in cataract it is better not to operate at once on both eyes; the same obtains in hydrocele, and the extirpation of several cystic tumours of the hairy scalp. In resection of the entire lower jaw, he advises that the removal of the second half should not be undertaken till the sublingual tissues on the first operated side have acquired new attachments. This is in order to prevent retraction of the tongue. In an article on the after-treatment of operation-wounds Heyfelder insists on the necessity of a spare diet, especially during the first five or six days, until the wound has either closed or is everywhere suppurating, when the inflammatory

tension is replaced by relaxation, and the spare diet may be changed for one more nourishing. He considers that the French and the southern races are naturally more moderate in their diet than the Germans, English, Dutch, and Russians, and that daily experience shows that erysipelas is often the consequence of an error in diet. This cause is also productive of pyæmia in patients who have been operated on at home, and who have not been exposed to hospital influences.

The first dressing of a wound ought to be left on as long as possible, and this is only practicable when it is very simple and unproductive of irritation. Sutures are preferable to strips of plaster. Ligatures should be cut off short. The custom of leaving one end and fixing it in the lower angle of the wound is neither necessary nor useful, but altogether injurious and wholly unjustifiable. After putting in the stitches, the wound should only be covered with a fenestrated piece of linen, soaked in oil, and spread with a simple wax cerate to prevent its sticking to the wound. He deprecates stuffing or covering the wound with charpie.—*N. Syden. Soc. Year-Book*, 1860, from *Deutsche Klinik*, No. 39.

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52. *A Modification of the Rhinoplastic Operation.*—The operation for a new nose which some twenty years ago made so much noise, has for some time been abandoned in Paris. Artificial noses formed merely from the soft parts, M. Velpeau observed on introducing to the Academy a new operation by M. Ollier, have furnished but unsatisfactory results. The transplanted skin after a short time becomes wrinkled and misshaped, so that the unfortunate patient derives little benefit from what he has undergone. M. Ollier proposes to meet the inconvenience by keeping up the flap by means of an osseous support, which may be obtained in two manners. By the one, the periosteum is detached from the frontal bone at the same time that the portion of skin necessary for the formation of the nose is obtained. This portion of periosteum will produce a plate of bone which will suffice to prevent the consecutive sinking in of the soft parts. Or the bones of the nose may be replaced by fragments of bone taken from the face, *e. g.* the ascending apophysis of the maxillary. A patient was presented to the Academy whose nose had been restored by one of these processes, three months since, with satisfactory results.—*Medical Times and Gazette*, December 7, 1861, from *L'Union Médicale*, No. 137.

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53. *Œsophagotomy.*—Prof. Syme relates (*British Medical Journal*, August 24, 1861) the following case: M. C., aged 45, was admitted into the hospital on the 22d July, 1861. She stated that six days before the time of her application, while eating mutton-broth, she had suddenly felt inability to swallow, together with severe pain, from which she concluded that a piece of bone had stuck in her throat. Under this impression, she had applied for assistance, and been treated by the introduction of probangs or other instruments, without success, so that her distress remained unrelieved, and became complicated with fits of dyspnœa, which repeatedly threatened to prove fatal. On examination, I found her in the state described, with a very anxious expression of countenance, and slight general fulness of the neck, which was not discoloured or otherwise altered, but felt somewhat tender under pressure. Having introduced the long curved forceps, without being able to touch the foreign body, but feeling satisfied, from the circumstances just mentioned, that there was one present; and fearing, that if allowed to remain, it would cause suppuration, if indeed it had not already done so, I considered it necessary to adopt the only effectual mode of affording relief, by performing the operation of œsophagotomy.

With this view, having administered chloroform, I made an incision as if for ligature of the carotid artery, exposed the edges of the sterno-mastoid and sterno-thyroid muscles, and then opened the deep fascia of the neck, from under which a small quantity of purulent matter escaped. Introducing my finger through the narrow passage thus detected, I carried it upwards and backwards to the posterior part of the gullet, where a piece of bone was felt protruding from the canal. The requisite dilatation having been made, I guided in a pair of polypus forceps, and extracted a piece of mutton bone, extremely thin, but nearly an inch square.

The operation was performed on a Thursday, and on Friday the patient seemed to be doing well; but on Sunday I was told that she had become delirious on Saturday, and appeared to be sinking. Upon visiting her, I found the hands blue and perfectly cold, with the faintest possible thrill instead of a pulse, so that the case had certainly a most hopeless aspect. It occurred to me, however, that the symptoms might possibly proceed from hunger, as the patient, during the whole week, had not been able to swallow at all, and since the bone was removed had done so very imperfectly, from the milk and other fluids given to her escaping in great part by the wound; I therefore, by means of a catheter, introduced from the mouth into the œsophagus, immediately injected some beef-tea, with wine. In the course of half an hour, there was, in all respects, a decided improvement, which, through a continued employment of the same means, repeated regularly at proper intervals, gradually increased, until recovery was completed at the end of a fortnight.

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54. *Observations on the Division of the Gustatory Nerve, and on the Ligature of the Lingual Artery, in the treatment of Cancer of the Tongue.*—A paper on this subject was read before the Royal Medical and Chirurgical Society, Nov. 26th, 1861, by CHAS. H. MOORE, Esq. The principal object of the author was to revive an operation which had been devised by Mr. Hilton, once practised by him in the year 1850, and, though of much value, never again performed.[1] Amongst the many sources of the peculiar painfulness of cancer of the tongue, irritation of the fifth nerve could be assigned as occasioning the pain of so much of the tumour as was in front of the fauces, the tenderness of the ulcer, the pain in the regions of the parotid, ear, temple, and crown of the head, and the excessive secretion of saliva. All these being traceable to the encroachment of the disease on the gustatory branch of the fifth, the section of that nerve between the disease and the brain should relieve them. The cases showed such relief to be instantly afforded when the nerve had been divided.

The operation, as practised by Mr. Moore, consisted in cutting through all the soft structures on the inside of the ramus of the jaw by an incision immediately behind the last molar tooth, extending three-quarters of an inch in a direction from the angle of the jaw. The only structures which could be divided by such an incision were the mucous membrane and a part of the mylo-hyoid muscle, with the gustatory nerve descending forward between them, about half an inch from the tooth, and nearly at a right angle with the direction of the incision. It was advisable to operate with a curved knife, as the alveolar ridge might shield the nerve from the edge of a straight one, and also to cut outwards quite to the bone.

The author had operated in five cases of cancer of the tongue, three of which were given at length. The relief was immediate. Salivation, the pains and tenderness of the tongue, and the reflected irritation of the fifth nerve, were all gone at once. Soreness of the wound, with swelling, remained for some days; but after that the patients took food, swallowed, and spoke with comparative ease. They slept, and improved in general health. The tongue in each case was absolutely insensitive on the side operated on from the anterior pillar of the fauces forward, and no sapid substances aroused taste in those parts. One patient frequently, on awaking from sleep, found himself chewing the cancerous mass in his tongue between his toothless gums, but the compression occasioned him no pain. The relief was permanent so far as the gustatory nerve was concerned, but when the disease invaded the area of the glosso-pharyngeal nerve, new pain arose. One patient had been operated on in August, and had no return of pain up to the present time—a period of three months. In the last-mentioned case the author had attempted to benefit the patient, in whom extirpation was unsuitable, by withdrawing from the tumour its nourishment of blood, in addition to its nervous influence. He accordingly tied the lingual artery on the side of the disease two days after he had divided the gustatory nerve. The ulcer became paler after the operation, but neither sloughed nor healed, and in five weeks the whole tumour was perceptibly smaller than before

[1] Guy's Hospital Reports, second series, vol. vii. p. 251.

the operations. From that time the tumour began again to increase. The author had desired, upon the renewal of growth in the tumour, to tie the opposite lingual artery also, but the patient was content with the amount of ease which he was enjoying, and indisposed to incur a renewal of the pain which had followed the first operations.

Mr. Holmes Coote, after thanking Mr. Moore for his paper, said that cancer of the tongue was a disease attended with so much pain and distress, that any plan of treatment which offered a prospect of relief should be thankfully received and investigated with patience. He could not recollect an instance of permanent cure of this disease after any operation, however skilfully performed. —*Med. Times and Gaz.*, Dec. 7, 1861.

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55. *Perforation of the Mastoid Process.*—The indications for the operation of perforating the mastoid process in *otitis interna*, are not yet so firmly established as is the case with other operations. It was, perhaps, too frequently and indiscriminately done at first, and afterwards entirely rejected and considered illegitimate, although there can be no doubt, that cases occur in practice, in which the operation ought to be performed in obedience to the fundamental principle, that every accumulation of pus in the tissues is to be evacuated as soon and as completely as possible, in order to prevent its noxious effects upon the neighbouring parts, and a further spreading of the inflammation. The tissues adjoining the mastoid process, viz.: the dura mater, the carotis interna, the vena jugularis interna, and the sinus transversus, are so important that a morbid process which spreads to them from the middle ear, is fraught with danger to life, independently of the circumstance that the sense of hearing may be weakened or even entirely annihilated by the presence of pus in the middle ear. Dr. von Troeltsch, the well-known aurist of Wurzburg, believes the disinclination of surgeons to act in this instance in accordance with the principle just announced, to be due to their considering diseases of the ear as exceptional complaints for the treatment of which special rules are required. Dr. von Troeltsch, however, strongly objects to such reasoning. The cells of the mastoid process are in open communication with the cavity of the tympanum; they are covered with the same mucous membrane, and participate in all the affections of that cavity. Pus accumulates the more readily in these cells, as their communication amongst each other and with the anterior part of the middle ear, is often very narrow, so that the pus is easily shut in, besides which a large portion of the mastoid process lies deeper than the membrane of the tympanum, and the meatus auditorius. The membrana tympani may therefore be perforated, and the secretion of the cavity of the tympanum may be allowed to freely escape outwards; and this will, nevertheless, not provide an outlet for the pus within the mastoid process. If the matter which is accumulated there does not spontaneously make its way outside, by the formation of a fistula behind the ear, which sometimes occurs, the surgeon has no choice but to break through the external layer of the bone, in order to gain access to the seat of the pus; so much the more as the introduction of warm vapours into the Eustachian tube has no decided beneficial effects in severe cases, although in mild forms of this affection frequent gargling and repeated blowing in of air into the tube, by means of a catheter, may serve to prevent the case from getting worse, and may act favourably altogether. If the bony layer which has to be perforated is very thin and fragile, an ordinary buttoned probe will answer the purpose; but if such is not the case a hollow chisel ought to be used for it. Dr. von Troeltsch also says that in every case, an incision, about an inch long, behind the ear, and parallel with the concha, ought to precede the perforation of the bone, as laid down by Dr. Wilde, of Dublin. Such an incision always produces a favourable result; the bleeding being considerable. The chisel should then be inserted in the middle of the incision, at an equal height with the opening of the ear, and ought to be carried horizontally and a little forwards. In this way the dura mater and the sinus transversus are avoided, and the surgeon rapidly arrives in the large cells which are closed above and behind the cavity of the tympanum. The incision itself had best be made three or four lines behind the insertion of the concha, as, if it were made further forwards, the posterior auricular artery or its branches might be

wounded; and if the incision is made further back, there is the danger of touching the sinus transversus with the chisel. The instruments must of course be used very gently, and with interruptions, in order to allow of cleaning the wound and probing, just as during trepanning, and also to avoid a sudden piercing of the bone.

The first proposal to do this operation was made by Johannes Riolanus (1649) and Rollfink (1656), who recommended it for deafness and noises in the ear, caused by obstruction in the Eustachian tube. Valsalva, in 1704, made injections through a fistulous opening which existed behind the ear; and J. L. Petit was the first to perform perforation of the mastoid process by means of a hollow chisel and a hammer. The patient's life was saved thereby. Dr. von Troeltsch knows altogether of eight cases of this operation, all of which took a very favourable turn, so that the operation is evidently not so dangerous as it is reputed to be. The second case occurred in the practice of Jasser (1776); his patient was a soldier who had for several years suffered from pain in the ear, suppuration, and deafness. A slight prominence having been formed behind the ear, Jasser made an incision one inch long behind the ear, after which very little pus came away, and it was only when he had penetrated with the probe into the cells of the mastoid process that much matter was evacuated. The pain in the ear then ceased at once, and never returned; the deafness was improved. The other mastoid process was also pierced in this patient with a trocar, for deafness, not for pain, and the hearing got better. The operation was now called "Jasser's operation." The third case is that of Fielitz. A young girl lost her hearing on one side, in consequence of an acute disease, and suffered for five years, at intervals, from an offensively-smelling discharge from the ear, which was always preceded by fever and severe pain in the ear. The mastoid process was pierced with a pointed instrument, and injections were made, after which much pus escaped. The discharge gradually ceased, and the hearing became completely re-established.

The fourth case is that of a patient under the care of Weber (1824). A peasant had suffered for three months from a very painful suppurative otitis, and as an incision behind the ear did not mitigate the pain, a trocar was thrust, three lines deep, and obliquely forwards, into the highest prominence of the mastoid process, ten lines behind the ear, seventeen lines from the upper, and four lines from the posterior edge of the mastoid process. Much pus came away; the pain disappeared immediately; the suppuration ceased four weeks afterwards; and a complete cure was the result.

The fifth case is that of Forget (1849). A young man became affected with otitis interna in consequence of a cold; copious suppuration in the ear set in, accompanied by paralysis of the facial nerve; but the latter disappeared a year afterwards. Two years after the commencement of the illness, the patient became completely deaf on this side, and the neighbourhood of the ear was greatly tumefied. The mastoid process was then pierced by means of a hollow chisel, and much pus escaped. A month afterwards a sequestered bone, three centimètres high and two centimètres thick, was removed, and from that time the patient began to improve, the suppuration ceased, and the hearing returned.

The sixth and seventh cases occurred in the practice of M. Follin, of Paris (1859). In both cases there was a fistulous opening, which was dilated by that surgeon by means of the trephine; six weeks afterwards the cure was complete. The eighth and last case is one of Dr. von Troeltsch himself (1860). A girl, aged 10, complained the second day after the eruption of the scarlet rash, of violent pain in both ears, which continued to increase until the fifth day, and then began to diminish, in consequence of a discharge from both ears having set in. The fever took its regular course. The discharge from both ears continued, and after some time the pain became again severe, especially behind the right ear, where a slight swelling was also seen. Three weeks after the commencement of the illness, the pain became most intense, and was accompanied with headache and deafness. Pressure on the mastoid process augmented the pain; the skin on the right side was slightly reddened and the whole neighbourhood behind the ear, and the upper and lateral region of the neck were diffusely swelled. Both meatuses were filled with thin pus, after the removal of which their walls appeared

to be tumefied; and in the background a drop of water was seen pulsating—an evident sign that both membranæ tympani were perforated. Injections of lukewarm water were then made four times a day; and after the injection, a weak solution of acetate of lead (five drops to one ounce) was dropped in; while mercurial ointment was rubbed in, round and chiefly behind the ear. During the next few days the discharge was not lessened, and the pain very much increased, the swelling behind the ear became more considerable, was very painful on pressure, and felt œdematous; no fluctuation was perceived.

Six days afterwards, an incision, one and a-half to two inches long was made behind the insertion of the concha and parallel with it down to the bone. The bleeding was profuse, and pus appeared immediately afterwards in the level of the external opening of the ear. In the evening after the operation violent pain was felt in the wound, but no longer in the ear; there was no fever. The swelling behind the ear became less on the following day, but again increased on the second day, when the pain also became more violent, and the discharge less abundant; on pressure behind the ear, pus escaped from the meatus. Two days afterwards Dr. von Troeltsch tried to penetrate the incised wound, which had already become narrowed, by means of a buttoned probe. In this he succeeded only for three lines and he therefore continued perforating with the probe, and afterwards placed a piece of charpie as deep as possible into the opening. Soon afterwards much pus, at first thin and afterwards thick, escaped from the opening while only a trifling quantity was discharged from the meatus. On the next day the patient felt better, the pain had entirely disappeared, and the hearing was improved. Injections were now made daily; the probe could penetrate an inch deep and the injected water escaped through the meatus, until about two months afterwards all discharge had ceased, and the recovery was complete. The girl died eighteen months afterwards, of tuberculosis of the lungs.

The *post-mortem* examination showed the following condition of the organ of hearing: On the right mastoid process a cicatrix was seen, which corresponded to the incision, and from this proceeded a canal in the mastoid process, with smooth walls, in the form of a cone, with its base behind, passing from behind forwards, four millimètres long, and closed inside. The external meatus was not pathologically changed. The mucous membrane of the tube was pale and covered with a little mucus; the narrowest part of the tube was abnormally dilated; its osseous part was cylindrical and also dilated. The posterior half of the membrana tympani was wanting, except a small strip behind and above. The anterior part of the hole was drawn inwards, and grown together with the opposite wall of the cavity of the tympanum. The manubrium mallei was drawn inwards, and firmly soldered to the wall of the labyrinth. The cavity of the tympanum, therefore, consisted, properly speaking, of two parts, the anterior of which, lying before the manubrium, was connected with the tube, the posterior with the meatus. There was no communication between these two parts, so that water injected through the meatus did not penetrate into the tube. The posterior half of the cavity of the tympanum which communicated with the meatus was also completely closed, posteriorly and superiorly, towards the mastoid process. The stapes was grown together with the upper part of the perforation, but it was movable, and its joint with the crus of the incus was not severed. The malleus and incus were also movable. Between the head of the malleus and the ostium tympanicum of the tube there was a firm and strong band, horizontally situated, which contained the tendon of the tensor tympani muscle. This band connected the inner and the outer wall of the cavity of the tympanicum, and communicated with the exudations separating the cavity of the tympanum in two halves.

At the left side the meatus did not contain any abnormal secretion. The upper part of the tube was abnormally dilated. The posterior half of the membrana tympani, close to the manubrium of the malleus, showed an indented perforation of the size of a grain of hemp, the posterior edge of which was grown together with the opposite wall of the cavity of the tympanum and with the capitulum of the stapes. A series of rather succulent adhesions connected the upper and anterior part of the membrana tympani with the tendon of the tensor tympani muscle and the opposite wall of the labyrinth. A thin but firm adhesion was

seen backwards. The mucous membrane of the cavity of the tympanum was thicker, softer, and contained more blood than usual. All the ossicules were freely movable. The cells of the mastoid process were fine, its meshes filled with a reddish-yellow liquid, which only contained a few small cells with several nuclei and exudation corpuscles. The history of this case gives another striking proof for the fact, that very considerable changes may take place in the membrana tympani, and, nevertheless, the hearing of the individual concerned may not be seriously affected.—*Medical Times and Gazette*, September 28, 1861.

56. *Lithotrity.*—Mr. F. C. SKEY makes the following interesting remarks relative to some cases of lithotrity that have fallen under his observation at St. Bartholomew's Hospital:—

"A man, aged 68, admitted in November last, had suffered from symptoms of stone for three years, during which he had passed about 100 small stones, varying in size from that of a large shot to that of a pea. I broke the stone by eight several operations, each of which was unproductive of serious pain, and was followed by more or less relief. A small fragment only remained in the bladder. After the last operation, which was not characterized by any remarkable feature, he had rigors, vesical pain, and low fever, and he died. The post-mortem examination revealed disease of long standing in both kidneys.

"A boy, aged fifteen, admitted in October, had had symptoms of stone for two years. I crushed the calculus, which I presume to have been about the size of a large almond, twice only, at an interval of ten days. The boy left the hospital well.

"A boy, aged ten, admitted in January, had suffered from symptoms of stone for three years, during which he is reported to have had several attacks of retention of urine. His urethra being large, and readily dilatable, I decided on treatment by lithotrity, and for which I had a small lithotrite made. The stone was crushed twice, without pain. On the following morning a fragment of stone became impacted in the urethra, and retention supervened. No alternative remained but lithotomy. As I was unable to pass a staff into the bladder, I cut down on the urethra without it, and, having removed two large fragments of stone from the canal, I opened the bladder by the aid of a staff, and expelled the residue of the calculus by injection. More than half the stone had lodged in the urethra. The boy recovered. I freely confess the attempt to remove a stone from the bladder of a boy ten years of age by lithotrity to have been an error in judgment. The first fragment that escaped was of considerable size, and at once blocked up the canal. The rule I have consequently adopted for my own guidance is, never to operate with the lithotrite unless the urethra will admit a catheter of the size of No. 9 or 10. In this patient's case the lithotrite was No. 6, though the urethra was dilatable to about No. 7, or perhaps 8.

"A man, aged seventy-two, was admitted in May, from whom I had removed a stone by lithotrity in 1851. The peculiarities of this case were connected with the physical qualities of the stone itself, from which arose a very protracted term of treatment. I operated on him no less than seventeen times. The calculus was of lithic acid composition; and I may remark, after some considerable experience of the operation of lithotrity, that the hardest calculi I have ever broken have consisted of lithic acid, and not of oxalate of lime. I never once *crushed* this patient's stone; I only broke it into small fragments. No part of it was ever reduced to powder, as in other examples; but the entire stone, when finally collected, consisted of a multitude of fragments of nearly equal magnitude —about that of a large shot. The force of the screw required to break the stone continued very great up to nearly the last operation. On several occasions I came to apparently a dead lock, and it required all the power at my command to screw the instrument home. Notwithstanding this force, at the termination of the case the blades of the lithotrite did not indicate more than a very slight strain in the workmanship, so perfect is the material of which these instruments are constructed.

"There are, in my opinion, comparatively few cases of calculus in which the operation of lithotrity is not available. It may be most efficiently performed

by any person possessed of ordinary skill and knowledge, and I earnestly join in its advocacy by the greatest of our modern surgeons."—*Lancet*, Oct. 5, 1861.

57. *Operative Treatment of Peritonitis.* By Dr. MARTEN, of Hörde.—In full consciousness of the insufficiency of my powers, and resting on two cases briefly noted in the course of a laborious practice, I can only aim at inviting the reader to repeat the following investigation of a morbid process, which, so far as I am aware, has not of late years been thoroughly worked out in German dissertations and monographs—at the same time calling attention to some voids, particularly the analogy of peritonitis with inflammation of other serous membranes, and especially of the pleura, promoting the plan of operative treatment, and submitting *gastrotomy in abdominal empyema* to the examination of competent judges. Far from believing that I am bringing forward anything new, as all manuals of special pathology and therapeutics mention surgical interference in circumscribed peritoneal abscesses—and Lebert[1] even warns us not thereby unseasonably to disturb the accumulation of effusion tending towards the bowel, the bladder, or the vagina—I will rather support the application of some old rules of general oncology to inflammation of the peritoneum, and adopt Leubuscher's words:[2] "When by considerable increase of the effusion very great difficulty of breathing arises, and paralysis of the diaphragm is to be feared, paracentesis may become necessary as a vital indication, though in continued inflammatory irritation it affords much fewer chances than in simple dropsy."[3]

My two cases are: 1. Lina Lessing, aged 10 years, a slender child, born of healthy parents, and having hitherto always enjoyed good health, took ill suddenly on the 12th of May, 1858, in consequence of cold, with symptoms of general peritonitis; violent persistent pain over the whole abdomen, which latter could not bear the slightest touch, was hot and tense; vomiting, constipation, interrupted and rapid respiration, constant fever, with the pulse at 120. Copious local abstractions of blood, in combination with the use of opium, produced only transient relief, until on the 18th, with slight remission of the fever and pain, an effusion took place into the sac of the peritoneum, demonstrable throughout three fingers' breadth above the pubis by distinct fluctuation and a dull sound on percussion, and altering its level on change of position. Under the exhibition of half a grain of calomel every two hours, the effusion had on the 31st with remission of pain ascended above the navel, the latter projecting in the form of a thimble, and the abdomen being so distended that it presented the appearance of a six months' pregnancy in miniature. On the 3d of June, a small, round, yellowish-gray transparent spot had formed on the point of the navel, into which I passed a Langenbeck's insect-needle to behind the lancet-shaped extremity, and in drawing it out somewhat enlarged the puncture. About a pint of creamy yellow, not fetid pus, was immediately discharged in a full stream, mixed with a few little flakes and thicker coagulated lumps. Under the use of warm cataplasms and Stromeyer's oiled tents, the discharge continued in constantly diminishing quantity until the 8th, when the navel had resumed its normal shape, a little serous fluid trickling from the opening from time to time. The patient having been put upon strengthening diet, the opening had on the 15th closed; the sound on percussion over the whole abdomen was again tympanitic, digestion was normally performed, the bowels were regular, and the child to be considered as well.

2. Augustus Bennekamp, aged 5 years, the child of healthy parents, enjoyed good health until the 9th of January in the present year. He then took ill, without any assignable external cause, of acute peritonitis, which, after seven days' antiphlogistic treatment, assumed a chronic form; the vomiting ceased, the appetite and the action of the bowels gradually returned, the fever continued in a remittent form. The abdomen remained distended, and was very painful to

[1] Handbuch der Practischen Medicin, Band ii. p. 410.
[2] Med. Klinik, Band i. p. 608.
[3] Compare also Henoch, Klinik der Unterleibskrankheiten, Band iii. p. 328; and Siebert, Diagnostik der Krankheiten des Unterleibes, p. 176.

the touch; and on motion, there was fluctuation, and a dull sound on percussion in the lower part of the abdomen, while the discharge of urine continued undiminished. The free effusion, the level of which varied with the position of the patient, in this case ascended to the navel, though the latter was not at the end of the fourth month prominent; the linea alba, on the contrary, projected in a boat shape. Notwithstanding that his appetite continued good, the patient was worn to a skeleton. Rigors were observed neither in this nor in the preceding case. Both outward and internal remedies having failed, and the parents having refused to allow surgical interference, our efforts were now confined to regulating the functions and supporting the strength. At last, on the 5th of June, spontaneous rupture took place; through a small opening in the navel some ounces of ordinary pus were first discharged, then a serous fluid mingled with yellowish-gray, non-fecal, crumbling flakes, alternating with pus. Under bad management the opening from time to time became obstructed; the pus became inspissated; and the following state exists to-day: The chylopoietic functions are nearly normally performed; the strength is so far restored, while the fulness increases, that the little patient can walk some steps. The lower half of the abdomen, particularly in the linea alba, is still distended, painful, and hard. The sound on percussion is there dull; fluctuation is no longer perceptible; the lower half of the navel is closed; a serous fluid occasionally trickles forth. The possibility of complete recovery is not to be denied; nevertheless the chronic stage includes the further dangers of fresh inflammation, perforation, adhesions, pyemia, and hectic. In my opinion the seasonable opening of the abscess would have justified us in expecting a more rapid, more certain, and more perfect cure.

The question whether, in this case, we had to deal with a general or circumscribed peritonitis, I pass over, because, as Leubuscher[1] correctly remarks, "where the disease is of general extent, we can suppose only that a proportionally greater part of the peritoneum is attacked." Incomparably more important does it appear in practice to diagnose the quality of the effusion, the empyema abdominis, as the result of an extensive so-called general peritonitis, and for this we have sufficient data.[2] As original forms of the exudation, Bamberger describes[3] the fibro-serous and the hemorrhagic. When, in the first form, the quantity of the fluid portion is so considerable as to give a distinct feeling of fluctuation, it is, in the first place, to be borne in mind that Wintrich,[4] in pleuritic effusions, has, even after only five hours, "always" demonstrated a great number of pus-cells; and, secondly, that tolerably reliable symptoms may be discovered, indicative of the resorption of the serous portion, or of puriform metamorphosis.

2. The hemorrhagic exudation arising from dissolution of the blood or erosion of a bloodvessel, is, when it occurs in considerable quantity, to be distinguished by the preceding and accompanying illness, and the anemia; and in case of purulent metamorphosis, the diagnosis will present no great difficulties. For the change into tuberculous and cancerous exudation, the well-known diagnostic elements obtain; and an ichorous effusion is to be suspected, when puerperal, pyemic, septic processes, or perforations, more or less rapidly induce a fatal result.

The purulent nature of the effusion must, on the contrary, I believe, be inferred in practice, when, after the first acute stage of peritonitis has passed,

1. The distinctness of the fluctuation; and,
2. The quantity of the exudation, remain stationary or increase; consequently,
3. The boundary of the dull sound on percussion ascends in the upright position; and,
4. Exhibits a change of level according to the position of the patient.

Rigors and remission of the spontaneous pain, while sensibility to touch and motion continue, insure the diagnosis and justify the name of empyema abdomi-

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[1] Loc. cit., p. 599.

[2] The possibility of confounding this disease with ascites, an ovarian cyst, and abscess of the abdominal wall, or with the distended bladder, seems scarcely to be apprehended.

[3] Virchow, vi.

[4] Virchow, Bd. i. p. 231.

nis. If in addition there be a circumscribed projection of the abdomen, the empyema necessitatis, and the time and place for opening the abdomen are at the same time determined.

If we follow the fate of the pus in the sac of the peritoneum, four possibilities occur to us:—

1. Resorption. The critical evacuations of large deposits of pus through the rectum and bladder, assumed by the older pathologists as occurring without perforation, do not appear to be confirmed by exact observation. (Abundant sediment of urates in the cooled urine redissolved on heating the fluid.) But should we not deny the possibility of such a result in the case of moderate deposits of pus, which might have arisen through the confluence of circumscribed abscesses, we must, on the other hand, remember that it involves the great danger of pyemia and phlebitis.

2. Enucleation, thickening, and cretaceous metamorphosis. In this result, too, the maintenance of life and perfect recovery are by no means certain, as occasion may thereby be given to the development of inflammatory exacerbations, to purulent absorption, as well as to different diseases of the intestinal tube and of the other abdominal viscera.

3. Perforation of various hollow organs, in which perfect recovery most rarely occurs—death, on the contrary, being by far the most common result, as the contents of the abscess may be discharged into the cavity; and, on the other hand, in the absence of Roser's valvular apparatus, the contents of the latter or the atmospheric air may obtain access to the former, and induce ichorous decomposition.

4. Direct evacuation of the abscess externally, to lead in particular cases to the discussion of which problem of art is the object of these pages. Richter's remark[1] is undoubtedly to be quoted here: "Thus we have sometimes found an absolutely milky fluid in the cavity of the abdomen, and observed that the disease arose merely from a metastasis of milk. In such a case we have nothing to do but to evacuate this fluid. The disease never appears again, when once it is removed. Operation is the only means required for the total removal of the disease." Accurate examination would perhaps have led to the discovery of creamy pus in the milk. These results may be combined with one another.[2]

Statistical investigations as to the frequency of each of these results are the first desiderata; secondly, their pathological anatomy in reference to the formation and reformation of the membranes, as in my first case after recovery the movements of the intestine were in no way impeded, and the serous membranes therefore appeared to be wholly restored.[3] The resorption of the fibro-serous and of the hemorrhagic, as well as of the purulent exudation, would manifest itself by the opposite signs:—

1. By disappearance of the fluctuation; and,
2. By decrease of the quantity of the effusion: therefore,
3. The boundary of the dull sound on percussion sinks, or becomes partially circumscribed; and shows,
4. No change of level according to the patient's position.

Palpation of the more solid and tumour-like exudation, and the great improvement in the general health, will in this case confirm the diagnosis. The indications for operative interference in empyema abdominis may be stated analogously to those for thoracocentesis:—

1. The indicatio vitalis laid down by Leubuscher, and quoted above—insufficient respiration and threatening paralysis of the diaphragm, through considerable increase of the exudation—will, in my opinion, provisionally hold good only where the effusion is of puriform quality.
2. The empyema necessitatis requires immediate opening.
3. When, after the expiration of the first acute stage of inflammation and remission of the fever, and notwithstanding the adoption of suitable treatment,

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[1] Wundarzneikunde, Band v. p. 125.

[2] Compare Rokitansky, Path. Anat., Band vi. p. 172.

[3] Compare Volz, on Perforation of the Vermiform Appendix caused by Alvine Concretions, &c., p. 61.

resorption is too long about setting in, and the considerable effusion remains stationary or increases, the time we may wait can in general not be even approximately fixed, and depends upon the state in other respects of the patient, the degree of marasmus, of the secondary dropsy, &c.

The contra-indications which present themselves are:—

1. The acute stage of inflammation;

2. Considerable complications: thus, the puerperal process will exclude all manual interference.[1] Whether in many cases of perforation of the intestine where the situation of the lesion can be accurately defined, particularly after typhlitis and inflammation of the vermiform appendix, an incision (colotomia) would not afford a better prospect, and be more rational, than the *opium euthanatodes*, I shall not venture to decide.[2]

As to the prognosis, I have nothing to say beyond the general well-known principles.

With respect to the choice of the place for operation, in empyema necessitatis this is given; under other circumstances the linea alba, or the part which is most prominent and yields the most distinct feeling of fluctuation, is to be preferred.[3] In Dieffenbach's warning and apprehension,[4] I cannot participate: "We should avoid," he says, "puncturing the navel, when the skin is protruded or attenuated. In such instances the wound heals with difficulty or not at all, and may become dangerous to life." But, as in my first case, the choice of situation is sometimes excluded; and even old Gottl. Aug. Richter says,[5] in speaking of ascites: "As the little puncture does not immediately close, the continual trickling forth of the water (or pus) prevents the too rapid reaccumulation of the fluid in the abdominal cavity" (the entrance of air and other unfavourable accidents). "With respect to the operation, we may have the less hesitation, as the swollen navel, if not opened, usually gives way spontaneously; for cases have been observed where it has broken of itself, and the water has, without any evil consequence, been discharged; the operation, moreover, has already actually been successfully performed."[6] "The fear of umbilical hernia (Garangeot) appears to be unfounded (Sharp), especially when a small opening is made." Although the opening is usually situated by no means at the lowest point of the abscess, the complete discharge of the pus is effected, in opposition to the law of gravity, through the contractions of the diaphragm and of the abdominal muscles.[7]

Respecting the mode of operating, I am convinced that, as in thoracocentesis according to Marotte, so in empyema abdominis, the preference must be unconditionally given to incision with the knife; or, what is equivalent, to the valvular incision and perforation of the parietal peritoneum with the point of the knife (Rieke), instead of puncture with the trocar, and for the following reason:—

It is prudent, in deep abscesses, to divide the layers covering them gradually, and by renewed palpation to make the fluctuation (or pulsation) always more distinct, especially where the walls are fatty or œdematous.

The entrance of air, which when to a slight extent is confessedly not of much consequence, in the operation for empyema abdominis, occurs much less easily than in that for empyema thoracis; and, if we do not operate with the trocar, perhaps never takes place, because the yielding of the soft integuments to the external atmospheric pressure, and the immediate contractions of the diaphragm and abdominal muscles, must render it nearly impossible. In very well-marked cases, the practised and bold operator, like Velpeau, may, in opening the pleural

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[1] Compare Moser, Geschlechtskrankheiten des Weibes, p. 587; Scanzoni, Geburtshülfe, p. 962.

[2] Compare Piorry's Proposal, Rev. Med.-Chir., October, 1847; Stromeyer's Cases in Maximen der Kriegsheilkunde, p. 636; and Laparotomy in Fecal Extravasations, Roser, Anat. Chir., p. 224.

[3] Bamberger, *loc. cit.*, p. 697.

[4] Vidal-Bardaleben, Chirurgie, Band iii. p. 681.

[5] Anfangsgründen der Wundarzneikunst, Band v. p. 134.

[6] Sims, Memoirs of the Medical Society, vol. iii.

[7] Compare Stromeyer, *loc. cit.*, p. 191.

cavity, without further preparation thrust the bistoury through the abdominal wall. Even for injection, the advisability of employing which cannot be considered as a settled point, I believe the use of the trocar to be not absolutely necessary, as it appears to me that by employing a filled syringe the entrance of air can be equally well avoided. Opening the abscess, on the contrary, by means of caustics, drawing plaster, setons, or blisters, appears, *à priori*, to be as impracticable as the establishment of a counter-opening.

For the after-treatment, the oil-tent and the application of warmth and moisture are sufficient; in the general management, a strengthening regimen should be adopted.—*Dublin Quarterly Journal*, August, 1861, from *Virchow's Archiv.*, Bd. xx. Heft 5 and 6.

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58. *On Certain Grave Evils Attending Tenotomy, and on a New Method of Curing Deformities of the Feet.*—A paper with this title was read by Mr. Richard Barwell before the Royal Medical and Chirurgical Society, November 26, 1861. The author remarked that the purely mechanical treatment of club-foot, which had since 1832 been superseded by tenotomy, could as a rule deal very successfully with those lateral twists of the extremity which are called varus and valgus, but that the equinal deformity could hardly ever be cured by these means. This peculiarity is attributable to the great power of the muscles attached to the tendo-Achillis; for contracted muscles may be lengthened with an ease which is, *cæteris paribus*, in direct ratio with their power. At the present time the treatment of pes equinus is, above all others, simple and satisfactory, because division of the tendo-Achillis gives the means of lengthening this part in a few days. In a similar manner, though in different degrees, the treatment of all other deformities in which extension mingles is assisted by this section. The inward twist of the foot—varus—is now treated by division of four tendons at least (tibialis posticus and anticus, flexor longus digitorum and the tendo-Achillis), and frequently also of the plantar fascia. A very similar treatment is inflicted on valgus. "The peronei tendons are to be divided, or, together with them, those of the extensor longus digitorum and the tendo-Achillis, and also those of the tibialis anticus and extensor proprius pollicis, when they are retracted." Can we be surprised that after this there should be, as admitted by the above-quoted orthopædist, "difficulty in continuing sufficient support to the arch of the foot? and even after the arch has been perfectly restored, support is required during many months."[1] But if the deformity have arisen, not from spasm in the predominant muscles, but from debility of their antagonists, division of the still active tendons produces disastrous consequences. Mr. Barwell was led, four years ago when examining some old cases of tenotomized feet whose actions were clumsy and ill-performed, to doubt the desirability of dividing several other tendons as unhesitatingly as above described; and he thinks himself now in a position to explain the dangers and evils resulting from such practice. In 1842, M. Bouvier reported to the Académie Royale several experiments performed on the tendons about the feet of dogs, and one on a horse. In no one case did these tendons unite so as to be of any subsequent value. Moreover, there are examples on the human subject in a recent work on the "Reparative Process in Human Tendons." Mr. Adams has collected together all the cases he could get at of *post-mortem* examination after tenotomy. Amongst these there are seven in which other tendons besides the Achilles were divided, and in every one of them one or more of the severed tendons is either not united at all, or has become attached to the bone or surrounding parts, so as to be of no possible use hereafter.[2] The evident and sole conclusion from them is, that such muscles as the tibialis posticus and flexor longus digitorum might as well be struck by sudden and irremediable paralysis as be subjected to the knife of the tenotomist, and that the tibialis anticus is only a little better situated. Probably the peronei are quite as exposed to non or false union as the two first-named muscles, since their situation behind bones is analogous. Thus, to divide these tendons is to produce a lameness, perhaps less apparent, but more incurable,

[1] Brodhurst on Club-foot.

[2] An analysis of the cases justifying these assertions was appended.

than that for which the operation was originally performed. Mr. Barwell then proceeded to question the necessity of dividing those tendons in order to restore the shape of the foot, quoting Dr. Little's opinion, that indiscriminate section was the rule, even with regard to the tendo-Achillis, and giving his own experience that division of the other tendons was hardly ever necessary. In support of this view he mentioned another curious result of the above-named autopsies—namely, that in one case an attempt had been made to divide the posterior tibial tendon, and the limb came so easily into shape that it was thought to have been divided, but after death was found to have remained whole. With all these facts before us, the author said it was our duty to avoid dividing tendons about the foot, and to return to mechanical treatment. The mechanical shoes of the best form receive the foot, and then act simply by twisting it in a direction contrary to the abnormal bend. In such contrivances no heed is taken of the condition of the muscles nor of their direction, and they are all such as greatly prevent the power of walking. The author makes the following propositions: The balance of the foot is kept up by a set of muscles which antagonize one another. By abnormal predominance of any one set deformity is produced. The predominance may be from excessive contraction of the prevalent muscles, or deficient action of their antagonists. In either case our efforts should be directed to counteract the predominant force by applying a power in the direction of and as much like the deficient muscle or muscles as possible, and, at the same time, the foot must be allowed its use. These indications are thus carried out: A broad and long piece of strapping-plaster, spread on a thick material, is made to adhere over the origin of the muscle and along its course. Upon this is laid a piece of sheet tin, long enough to reach from the upper part of the leg to just above the ankle, and carrying at its upper part a wire loop; the piece of strapping is turned back over it, and lies with its adhesive side outwards. Another piece of strapping is placed on the foot upon the insertion and along the course of the tendon; the end of this strapping reaches to the bend of the ankle, and is folded over (the two sticky sides opposed), and an eyelet let into it. An assistant is now to hold the limb as near as possible in the right position, while it is being smoothly strapped from the toes to the knee, leaving out the end (with its eyelet) of the piece on the foot and the wire loop at the upper part of the leg. Between these two—the one representing the origin, the other the insertion, of the muscle—there is to be stretched an India-rubber spring, at a proper degree of tension. Thus, while there can be considerable force used in the direction of any muscles in the leg, the *point d'appui* is so supported by a loop of strapping, which takes its bearings from both the skin of the leg and the surrounding plaster, that no injurious pressure occurs anywhere. There are also some little contrivances for changing the direction of the force—as for the peronei tendons. Models showing this method and treatment were on the table, and cases of cure by these means were read.

Mr. Holmes Coote said that the Society felt indebted to the author for this paper, although it touched upon a class of cases that had of late years received, it must be owned, a very large share of general attention. Mr. Coote had listened in vain for the grave objections to tenotomy; and as for the treatment of deformities by extension, that was a principle dating from the earliest epochs of medicine. The three cases quoted by the author in support of his principle were, as far as Mr. Coote understood them, 1, a case of paralytic talipes equinus; 2, a case of weak ankle; 3, a case of flat foot. Now it was well known that the treatment of such cases by mere mechanical appliances was very generally all that was required. Tenotomy was the exception. But the division of tendons he affirmed to be almost invariably necessary in cases of congenital deformity, to which the author had not alluded. Experiments, as regards tenotomy performed on animals, were not satisfactory, owing to the impossibility of keeping the limb quiet or the bandages properly applied. It did not occur to him that the evidence offered by Mr. Adams, in his late work referred to by the author, was opposed to tenotomy, but he (Mr. Coote) affirmed that even if some of the smaller tendons did occasionally adhere to the sheath or neighbouring parts (an accident which should not happen), that inconvenience was not to be allowed to weigh against the great advantage of enabling an infant with a club-foot to put

the sole to the ground before the parts had become moulded to their abnormal position.—*Medical Times and Gazette*, December 7, 1861.

59. *Osteo-Plastic Resection of the Upper Jaw.*—This operation consists in separating the upper jaw from its connection with other bones, and again restoring it to its normal position. An operation of a similar kind was first done by Professor Langenbeck, two years ago, when he extirpated a naso-pharyngeal polypus; in that case he excised the nasal bone and the nasal process of the upper jaw, removed the tumour, and afterwards replaced the bones, with complete success. Another case in which the whole half of the upper jaw was first excised and then replaced, occurred in the practice of this distinguished surgeon a few weeks ago.

The seat of naso-pharyngeal polypi is such as to require the resection of one-half of the upper jaw, and this has been done repeatedly, in France especially, by Messrs. Robert and Maisonneuve. In the cases which occurred in Professor Langenbeck's practice, he had always been able to perform extraction either from the mouth or the nostrils, or by division of the soft palate, and resection of the horizontal part of the os palatinum, or the resection of the nasal process of the upper jaw. He was, therefore, averse to the extirpation of the upper jaw, especially as experience has shown that a recurrence of the tumour is not prevented thereby. There are, however, tumours which are attached in the neighbourhood of the Eustachian tube, and the foramen spheno-palatinum, and the sinus sphenoidalis, which cannot be completely removed unless the upper jaw is taken away. Besides, tumours are now and then observed in the fossa pterygo-palatina, which grow partly towards the naso-pharyngeal cavity, partly towards the fossa spheno-maxillaris, so that the upper jaw is quite surrounded by them, and must necessarily be removed before the surgeon can attempt extirpating the tumour. Professor Langenbeck, however, satisfied himself, by a close examination of the skull, that the region just described would become quite accessible by only removing the upper part of the jaw, without taking away the hard and soft palate and the alveolar process. Having been struck by this idea, he conceived that it might be possible to replace the upper jaw after the operation, just as he had succeeded in doing before with the nasal bone and the nasal process of the jaw. It was, of course, necessary to avoid the destruction of the soft coverings of the jaw, the skin of the face, the mucous membrane, and the periosteum of any part of the bone; and it was obvious that, on one point at least, it ought to remain attached to the neighbouring bones, in order to allow a sufficient supply of blood. These conditions he purposed to fulfil, by not separating the soft parts of the face from the bone, but merely cutting them through down to the bone, in the same direction in which the saw would have to work, and by leaving the nasal process of the upper jaw in contact with the nasal bone and the nasal process of the frontal bone.

The following are a few particulars of the case in which this operation was first performed with successful result: The patient, a boy, aged 15, had always been healthy until two years ago, when he perceived a want of air in the left nostril, which soon became perfectly impermeable, the voice being changed at the same time. About seven weeks ago, the left cheek and the eye began to protrude, and the latter, although otherwise healthy, was no longer used for seeing. No tumour was visible from the nostril, nor from the mouth, while in the middle of the left palatine process of the upper jaw the floor of the cavity of the nose appeared to be pressed toward the cavity of the mouth, and this part felt soft and elastic on account of the dislodgment of the palatine bone. Behind the soft palate, a firm, lobular tumour could be felt in the left choana, which was quite filled up by it, the introitus into the left side of the nose being blocked up. This latter space appeared to be considerably enlarged, while the right choana and nostril were narrowed. The osseous septum narium was dislodged towards the right side. The teeth in the left upper jaw were quite healthy and fast. The slight prominence of the left cheek was caused by a tumour between the masseter muscle and the upper jaw. The left zygomatic arch was a little more prominent, and the lower part of the left fossa temporalis fuller, than is commonly the case. Nothing morbid could be discovered in the orbit.

Other surgeons who had seen this patient contended that it was a case of naso-pharyngeal polypus; but Professor Langenbeck argued, against this opinion, that all tumours which are not cancerous—as, for instance, the polypi—grow in that direction in which the least resistance is offered by surrounding parts; and that, therefore, a naso-pharyngeal polypus would grow into the sinus frontalis, sphenoidalis, and maxillaris, and the labyrinth of the ethmoid bone, and might distend the walls of those cavities, but that it could not grow from the naso-pharyngeal cavity into the fossa pterygo-palatina, and round the upper jaw forwards. Others thought that a tumour in Highmore's cavity existed; but to this M. Langenbeck objected that the walls of that cavity were nowhere projecting, but, on the contrary, its external wall was decidedly flattened. He, therefore, before performing the operation, mentioned that the case was one of a fibroid of the fossa pterygo-palatina, which had grown from there through the foramen spheno-palatinum into the naso-pharyngeal cavity, the fossa spheno-maxillaris, and round the upper jaw, between its external wall and the masseter muscle, towards the mucous membrane of the cheek. He also said that the resection of the zygomatic arch, which he had done in a previous case, was sufficient for the extirpation of tumours which grew from the fossa pterygo-palatina into the fossa spheno-maxillaris and temporalis; but that, in this patient, in whom the tumour had penetrated from the fossa pterygo-palatina into the naso-pharyngeal cavity, the resection of the entire left half of the upper jaw was absolutely necessary. In order to avoid mutilation of the face, he intended trying to replace the upper jaw after the removal of the growth.

The operation was done on July 1st, the patient being under the influence of chloroform. Two incisions were then made through the skin, the lower one of these from the place of insertion of the left ala nasi in the cheek, and through this towards the lower edge of the zygomatic arch, and along this bone to the middle of the zygomatic process of the temporal bone. The upper incision proceeded from the nasal process of the frontal bone along the lower edge of the orbit, and beyond the frontal process of the upper jaw to the middle of the zygomatic process of the temporal bone, where it met the lower incision at an obtuse angle. Without separating the skin from the soft parts below it, the operator then penetrated through the lower incision towards the jaw, cut through its periosteum, and separated the masseter muscle from the lower edge of the zygomatic bone. After the fascia buccalis, which was strongly prominent, had been cut through, a lobular, white, shining tumour became visible, which extended, between the external surface of the upper jaw and the coronoid process of the lower jaw, towards the fossa spheno-maxillaris backwards. After the lower jaw had been separated from the upper one by means of a speculum, the tumour could without difficulty be removed from the upper jaw, and the left forefinger, proceeding between the upper jaw and the tumour, could reach the fossa pterygo-palatina. As the upper jaw had been compressed by the tumour, and the fossæ spheno-maxillaris and pterygo-palatina were considerably enlarged, a slight pressure was now sufficient to allow the introduction of a fine elevatorium into the pharyngeal cavity. A fine and straight narrow saw was then introduced from without into the pharyngeal cavity, through the fossa pterygo-palatina and the foramen spheno-palatinum; and the operator sawed through the whole upper jaw, from behind forwards, with a horizontal cut, while the left forefinger, which had been introduced into the pharyngeal cavity from the mouth, caught the point of the saw, and prevented its touching the septum narium. The second incision through the skin was then likewise made down to the bone; the operator penetrated into the orbit and cut the soft parts in the angle between the frontal and temporal processes of the zygomatic bone. The second cut of the saw went from below upwards, through the zygomatic process of the temporal bone, and through the orbital process of the upper jaw to the lachrymal bone. The resected jaw was now only connected with the left lachrymal bone and the nasal process of the frontal bone by means of its nasal process, which had not been divided; and in this part the skin had also been left entire, in order to allow nutrition to go on. Neither were the hard palate and the alveolar process of the jaw touched. The jaw was now raised by means of an elevator, introduced below the zygomatic bone. This was done without any difficulty, the jaw moving easily

in the connection with the left nasal bone and the nasal process of the temporal bone, as if it were in a joint, and was raised like the lid of a snuff-box, so that the zygomatic bone was nearly on the median line of the face; and the fossæ spheno-maxillaris and pterygo-palatina, and the naso-pharyngeal cavity, had thus become easily accessible. The peduncle of the tumour was now seen to be attached in the fossa pterygo-palatina, proceeding from there towards each side; it was as large as a fowl's egg, and one part filled the naso-pharyngeal cavity; the other the fossa spheno-maxillaris. The antrum Highmori, which had been opened by the horizontal cut of the saw at its inferior point, was empty and quite normal, although somewhat narrowed by the pressure of the tumour from behind and without. The peduncle of the tumour was then separated, by means of a broad elevator, from the fossa pterygo-palatina; the part, which was in the cavity of the pharynx, was then caught with a strong polypus-forceps and drawn out. The foramen spheno-palatinum and the fossa pterygo-palatina were enlarged to three times their normal size. The tumour was then entirely removed; and nowhere could a perforation of the basis cranii be discovered.

The hemorrhage during the operation was very considerable, on account of the dilatation of the arteries; but at the end it ceased spontaneously. Only the arteria spheno-palatina was tied at its entrance in the foramen spheno-palatinum, and the ligature conducted through the left nostril. After the wound had been most carefully cleaned, and the operator had again satisfied himself that nothing was left behind, the jaw was again pressed backwards into its normal position, and the places where it had been sawed brought into contact. The jaw showed a disposition to swing upwards to the nose, so that a slight pressure had to be exercised upon it before the wound was entirely united by means of iron sutures. Some cerate and a thick layer of charpie was then placed upon the wound, and fixed by a bandage. The operation had lasted nearly an hour. Much chloroform had been used, and the little patient had shown some excitement during the intervals of insensibility.

The further course of this case was very satisfactory. There was at first some fever and suppuration; but, in little more than a fortnight, the wound was quite healed. The appearance of the face was then nearly normal. The upper gum had quite regained its usual position, and there was no swelling of the soft parts; only the conjunctiva palpebrarum was a little puffed, but the eye did no longer protrude. There was imperfect palsy of the orbicularis muscle, and the eyelids could not be quite closed. Besides, the infraorbital nerve and the ganglion spheno-platinum had been destroyed by the operation, so that there is, of course, anæsthesia of the parts animated by them. In all other respects it was a perfect cure; and it appears, therefore, that henceforward it is no longer allowed to remove the upper jaw in cases of this kind. We may well congratulate M. Langenbeck for having successfully completed—not only a novel operation of importance—but one of the nicest and most difficult on record.—*Med. Times and Gazette*, Sept. 7, 1861.

OPHTHALMOLOGY.

60. *Diabetic Cataract.*—Dr. Lécorché has recently published a work on this affection which has not yet reached us, but the Paris correspondent of the *Lancet* (see number for October 5, 1861) gives the following interesting summary of it:—

"The diabetic cataract has for several years past been admitted as a pathological fact by both physicians and oculists, and the latter have learnt by experience to know that the methods usually resorted to for the relief of the ordinary forms of cataract have been remarkably unsuccessful in this particular variety. M. Lécorché's work is dedicated more especially to the solution of the surgical difficulty, and furnishes at the same time a contingent of original matter in connection with the symptomatology of this special type of lenticular opacity. Age,

as it would seem, possesses a marked influence on the development of this form of cataract, which appears most commonly between twenty-five and forty. The existence of the ocular complication may be to a certain extent taken as a gauge of the gravity of the diabetic symptoms, as it is only in severe and confirmed cases that cataract is present. The alterations in the anatomical character of the lens seem for the most part to be preceded by frontal and supra-orbital neuralgia, and diminution of visual power, or amblyopia. These changes generally commence about eighteen months or two years after the beginning of the malady, and progress, *pari passu*, with the increase of the sugar in the urine. The advance of the cataract may be either rapid or slow. In certain cases both eyes have been attacked, and the patient has been deprived of sight, within the space of a few days; in others, the disease has been slow, and it has been possible to watch its progress from day to day. According to Dr. Lécorché, in the latter case streaks (striæ) have been observed on the posterior aspect of the lens, converging from the periphery to the centre, augmenting in number each day, and gradually overspreading the crystalline surface so as to constitute that form of cataract known as the soft variety. When one eye alone is affected at the outset, it is mostly the right that suffers; the disease spreading, however, inevitably, within a given lapse of time, to the opposite organ. Whereas in cases of hard cataract the direct impression of light is painful to the patient, in this particular variety it is greedily sought. When the cataract is complete (and herein lie the elements of differential diagnosis) the lens is bulky, as it were swelled, and generally of a bluish-white tint. The iris is seen to bulge forwards towards the cornea, in consequence of the encroachment upon the posterior chamber by the disorganized crystalline body. The retina, when examined by the phosphenic test, is in the great majority of cases found to be healthy. With regard to the propriety of operation, the author remarks that where the diabetes is complicated with albuminuria no surgical interference should be attempted; the same rule holding good in the event of tubercular phthisis, marasmus, or other such unfavourable condition co-existing with the cataract. The choice as to the particular mode of operation to be adopted has already been decided by M. de Graefe, who advises either extraction by the linear method, or else a combination of iridectomy and the usual flap operation, the former preceding the latter by an appropriate interval."

61. *Cases of Reflex (?) Amaurosis with Coloured Vision.* By J. H. JACKSON, M. D., Clinical Assistant at the Royal London Ophthalmic Hospital, &c.—The first of the following cases is interesting not only pathologically, but also in relation to a medico-legal question recently raised in a court of law; and it is the more valuable that, not having occurred after any injury, there was no room for suspicion of unfairness in the description of the symptom by the patient—a symptom which, even after the use of the ophthalmoscope, must remain subjective. Before I relate the case, however, I may mention that the medico-legal question was raised in a recent action brought by a corn-dealer against a railway company, to recover damages for defective vision following on injuries received in a railway accident. The defect was stated to be coloured vision (yellow), so that the plaintiff was unable to distinguish yellow and white wheat—both looked yellow. In this case there was, I believe, no subjective symptom, either to the eye, unassisted, or aided by the ophthalmoscope.

A man, aged 39, admitted as an out-patient under Mr. Poland, came under my care on June 1st, for impaired sight, which had commenced gradually three months before. He could not read the largest print, and was led to the hospital. He had no pain, and had had none from the first. He had been temperate, and, except for the defect of sight and a few nervous symptoms, to be presently alluded to, was quite well. His eyes were examined by the ophthalmoscope by several observers, and both the optic disks were found to be anæmic. There was no trace of choroidal or iritic inflammation. The interesting point in this case, however, was, that the patient saw everything as if yellow; it mattered not what colour they might really be—they were all yellow. Again, this pathological condition was rendered interesting by the fact of his business being interfered with from the first, not merely by loss of the power of seeing, but by

the objects being seen coloured. Thus he might have pursued his business, of buying wood, in spite of considerable impairment of vision, if the element of colour did not come into play; *but he was unable to distinguish red-pine from yellow-pine, both looking yellow.*

In this case there was, as the ophthalmoscope showed, disease of the optic nerves, without any evidence of disease of the other structures of the eye, but there were symptoms which led me to believe that changes were also going on at the same time in other parts of the nervous system. These symptoms were only, however, temporary trembling of the legs, without evident cause, lasting for some time. a jerking up of the left leg, and a sensation of "pins and needles" in the toes, trifling as effects, but serious as signs of impaired nutrition of certain parts of the nervous system. I believe that they were signs of impaired nutrition in other parts of the nervous system coetaneous with—and not causing—the loss of sight. I suppose (how produced is another matter), that the anæmic condition of the optic disks, signifies impairment of the blood-supply of the whole retina, and that this patient's loss of the power of seeing and also of receiving a correct impression from light admitted into his eye, was due to some change, more or less permanent, in the retina itself, consequent on impaired nutrition, and yet in many cases of anæmic optic entrance there is no history of coloured vision. In many, however, there is; and red, and sometimes green "fogs" are mentioned. I have notes of a case of one patient who first saw a blue cloud before his eyes, which subsequently became black, or as we may say of all these cases that of the three colours which compose white light, one only is seen, and then later none, *i. e.*, when the "cloud" becomes black. In this case it was clear that there was no other disease of the eye than atrophy of the optic nerve. In fact, when he first came, several observers considered that the fundus was normal; subsequently, however, there was no doubt that the optic disks were in the condition commonly called atrophy.

In both these cases there was another symptom of interest, viz., that the sight varied remarkably. The patient who saw yellow said, that one morning, after having been excited, his "sight totally left him," and that in consequence, for a quarter of an hour, he could not see *at all.* He found, too, that his sight varied in the day. It was better in the morning, worse in the middle of the day, and better again late in the afternoon. In the other case, the patient, for a short time, recovered his sight entirely. He was a very intelligent man, and he described circumstantially what he saw, and what he was doing. This only occurred twice, and only lasted for about half a minute. I have said that I believed the loss of sight was due *directly* to what the ophthalmoscope showed, viz., to local disease in the retina, and this from impairment of its circulation, from contraction of the bloodvessels, the result, as I believe, in all these cases, of some eccentric irritation—the *indirect* cause of the blindness. I admit that in neither of these cases was I able to fix on even a possible cause of irritation; but in other cases, in which the condition of the optic disks was similar, I have had more certain evidence that some eccentric irritation existed. In one case, from this condition of the optic entrance, I considered the diagnosis I had made of disease of the cerebellum was rendered certain, and such proved to be the case. Again, although this feature also is absent in this case, the suddenness of the attack is some evidence, I think, that this affection, like other forms of paralysis, is due to eccentric irritation; and then, again, the sudden alterations in the sight would, I think, show that there could be no organic change *par excellence,* either in the retina or in the cerebral part of the organ of vision. I have found that these alterations take place only in the beginning of the affection. Of course, later, the continued defect of blood-supply produces permanent loss of function. We all admit cases of paralysis of a leg or arm in a child to be very often reflex, occurring *suddenly,* the paralyzed limb being cold, and ultimately wasting, the cause being probably, not a lesion between the nerves of the limb and the central nervous system, but some eccentric irritation acting on its bloodvessels. Then in other cases of reflex paralysis, as reflex paraplegia, sudden alterations of power are often well-marked. I should say then, that in this form of amaurosis there is some eccentric irritation acting on the vessels of the optic nerve and retina producing anæmia, and thus more or less loss of

function. Dr. Brown-Séquard tells me, that he has collected more than sixty cases of amaurosis connected with diseases of the cerebellum, produced, as he believes, by reflex action. The two following quotations from Dr. Spillan's translation of *Andral's Clinique Médicale*, will be interesting in relation to this subject.

"With respect to the fourth case published by Dr. Michelet in his Thesis, it is deserving of all our attention.

"This was the case of a girl, eighteen years of age, who two years before her death had had an attack of apoplexy, the result of which was *amaurosis without any other paralysis*, and habitual headache. An apoplectic cavity of long standing was found in the right lobe of the cerebellum." This could but have caused pressure upon the corpora quadrigemina. Speaking of a case of blindness, associated with hemiplegia consequent on disease of the cerebellum, he writes: "With respect to the blindness, it seems at first that it has nothing to do with disease of the cerebellum, and yet this case is not the only one in which different affections of the cerebellum have been accompanied by a loss of vision. May this fact be explained by the anatomical relation established between the cerebellum and the tubercula quadrigemina by means of the prolongations known by the name of the processus e cerebello ad testes."

In reference to the case I have related, I have only to add, that the patient who had the yellow vision is now almost well. He took iodide of potassium for some time, and later tincture of nux vomica in ten minim doses. Whether, however, his recovery is due to it, or to the iodide, or to neither, I do not pretend to say. If the theory of this case is the correct one, strychnia, which causes dilatation of the bloodvessels, should be the remedy for this form of amaurosis. Of course I do not pretend that there is any great novelty in the disease, the theory, or the remedy, although I do not know that this special form of amaurosis and the ophthalmoscopic condition have been *both* before linked to the theory of reflex paralysis. To show how little credit I pretend to claim, I insert the following quotation from one of Dr. Brown-Séquard's lectures in the *Lancet* for July 13, 1861:—

"*Amaurosis.*—This symptom may depend upon a lesion of the tubercula quadrigemina, or, of course, of the retina and any part of the length of the optic nerves; but it may also be the result of two other and distinct kinds of causes. It may be due to the effect of an irritation starting from any sensitive nerve in the body, or from certain parts of the nervous centres. An amaurosis in such cases seems to be the manifest result of a reflex action. I have seen it produced in that way in animals after an injury to the spinal cord. I have collected sixty-two cases of disease of the cerebellum in which it has been most likely produced in the same manner. My friend, Dr. Davaine, in his excellent work on Worms, mentions twelve cases in which amaurosis was due to worms. An irritation of the frontal nerve may bring on a reflex amaurosis, which is quickly cured after the division of the irritated nerve. Neuralgia of the face not rarely causes a reflex amaurosis. I have seen three cases of that kind, and others are on record. It is known that a simple irritation of the nerves of the stomach in gastralgia may produce a reflex amaurosis. This paralysis of the optic nerve, like all other reflex paralyses, is characterized by the following features: 1st, it, of course, only appears after the irritation which is considered as its cause; 2d, it is not accompanied by any evident alteration of the nerve or of the tubercula quadrigemina; 3d, it increases or diminishes in perfect correspondence with an increase or a diminution of its supposed cause; 4th, it is generally quickly cured or ameliorated when the supposed cause is removed."

I may also just suggest that cases of this kind might, if carefully examined, throw some light on the question, whether the eye or the brain perceives colour. I believe that the eye itself completes the act of seeing, not only in reference to form, size, and distance, but also as to colour, and that the brain merely perceives what is sent to it from the eye. My object in introducing the remarks on reflex amaurosis was to show that the disease produced is a local one of the retina, and not of the brain, or at least not of that part of it which has to do with the reception of the *idea* of size, form, colour, &c., from the retina; so

that the coloured vision was a consequence of local disease in the eye. The brain erred, not primarily, but in *receiving* false intelligence from the retina.

As to the subject of reflex amaurosis, by itself, I hope to be able to bring forward better evidence in a future paper; and by the kindness of Dr. Brown-Séquard and Mr. Poland, I shall be able to collect this evidence from several points of view, and thus to be able to separate more clearly this form of amaurosis from another group depending on intracranial disease affecting the course and origin of the optic nerves. I also hope, which is also of great importance, to explain those transient and slighter affections of the sight so common in cases of vertigo, the various kinds of headache, epilepsy, and simple debility. And conversely to throw some light on these diseases themselves by studying the circulation of the retina and iris—the very furthest outpost of the cerebral circulation—and thus to render more complete the natural history of those diseases.

The following extract from a letter from my friend Dr. Haydon, of Bovey Tracey, is of great interest in relation to the subject of coloured vision: I give it in his own words:—

"I was called yesterday to see an old lady with a somewhat strange condition of her visual apparatus; about a fortnight since 'she suddenly discovered that her right eye was all but dark, and that she could only see things with her left eye, and that all she did see appeared of a blood-red colour.' I give her own words. There is no cataract, or other appreciable defect in her right eye, nor can any external examination detect disease in the left; she has had no seizure or appreciable disease of the brain, but she is very stout, near seventy years old, heavy and sleepy; some two years since had some functional derangement of liver, followed by general dropsy. Free purging and a little calomel removed this; and there has been no return of it. Living careless, diet poor, no stimulants; the pupils dilate and contract readily and freely. I once before had a case very similar to this as regards the seeing everything of a red colour, but that person (also an old woman) had become so diseased in sight after an attack of apoplexy."

Dr. Haydon subsequently informed me that this patient recovered her sight. There was no ophthalmoscopic examination, and it is therefore possible that there may have been some other more organic disease than mere impairment of the nutrition of the retina. If, however, it was, which is my opinion, a case of reflex amaurosis, I have now given a case of red, yellow, and blue vision, or, as I have said before, a case in which (white light entering the eye), the retina did not perceive the yellow and the blue rays, another in which it did not perceive the red and the blue, and a third in which it did not perceive the red and the yellow. I might have given others in which, as I think, the change has gone a step further, and in which the patient, to use for convenience a contradictory expression, saw blackness, or rather did not see at all. In the congenital colour blindness there is an inability to see the colour of an object, and generally the red, the most refrangible, is the one which is not seen. As I say, in the above cases, the colours were various, but I can conceive that it is possible, that in the progress to blindness, there is, although unobserved by the patient, one order of progress, but in what order, and whether beginning from one end of the spectrum or not, I do not pretend to know.—*The Royal London Hospital Ophthalmic Reports*, Oct. 1861.

MIDWIFERY.

62. *Early Maternity.*—Dr. J. G. Wilson, of Glasgow, records (*Edinb. Med. Journ.*, Oct. 1861) an instance of this. A girl at the age of thirteen years and six months gave birth to a full-grown female child. Conception must have taken place when the girl was twelve years and nine months old.

Mr. Roberton records (Midwifery) a case where a factory girl became preg-

nant in the eleventh year of her age. Other cases of early maternity are recorded, but they are not common.

63. *Sneezing during Pregnancy.*—Dr. PETER YOUNG mentioned to the Edinburgh Obstetrical Society a case which occurred, two years ago, in the practice of Dr. Eadie, of Glasgow, where the patient had been the subject of constant sneezing during pregnancy. The application of a mustard poultice to the back had had the effect of allaying this distressing symptom, but not until the uterus had become so affected (probably) by the straining efforts, that a miscarriage was induced. He (Dr. P. Young) had seen Dr. Eadie a few days ago, and had been informed by that gentleman that the same patient was again pregnant, and had again become affected by the same constant sneezing after she had arrived at between the third and fourth month. Dr. Eadie thought the sneezing was caused by the changes produced in the uterus during pregnancy; but he (Dr. Young) believed that it was more probably due to the irritation from the fœtal movements, from the circumstance that the sneezing had begun about the period when the fœtal movements are usually perceived for the first time.—*Edinburgh Medical Journal*, Nov. 1861.

64. *Induction of Premature Labour; New Indication for it; Modes of Production.*—Prof. SIMPSON, at a recent meeting of the Obstetrical Society of Edinburgh, said that he had brought on labour prematurely, about four years ago, in a case where he believed that he had met with a new indication for the performance of the operation. Mrs. L., the patient who was the subject of the operation, had fallen in labour of her first child in 1851. Her labour had lasted two days, and was terminated by the head of the child, which was in a hydrocephalic condition, being perforated by Dr. Jamieson, of Peterhead. Her second labour, in 1853, was also terminated by means of the same operation, by Dr. Johnston, of Stirling, because of the same morbid condition of the fœtal head. In 1856 he (Dr. S.) first saw the patient, in consultation with Dr. Johnson, at a time when she had arrived at the eighth month of her third pregnancy. There was every probability that in this instance again the child would become hydrocephalic, and be destroyed at birth; and the probability was increased by the circumstance that the only sister of the lady in question had given birth to but one child, which had likewise been hydrocephalic, and had been delivered by means of craniotomy. The likelihood of the recurrence of the disease in the third fœtus was still further impressed on his (Dr. Simpson's) mind, by a letter which he received about that time from Dr. Embleton, of Embleton, in which that gentleman related how he had just delivered a woman of a child that presented by the breech, and was very difficult of extraction, because of the head being distended to twice the natural size from hydrocephalus. And Dr. Embleton had stated, further, that the first and third children of the same patient had been born hydrocephalic, and had been delivered by means of the forceps. Regarding it, therefore, as in the highest degree probable, in the case of Mrs. L., that if her third pregnancy were allowed to run its full course, her third child would become the subject of intra-uterine hydrocephalus like its predecessors, he (Dr. S.) had two reasons to lead him to induce premature labour at once; viz., 1st, it was a matter of great importance for the lady to have a *living* child, and there was little prospect of her hopes being fulfilled if her progeny were all born hydrocephalic; and, 2dly, it was fairly to be expected, that if the child could be brought into the world at once, and the conditions of its existence changed, it would have a better chance of escaping the dangers of the disease which had proved fatal to the first two children. The result justified his (Dr. S.'s) expectations. Labour was induced, and a living child was born, which he had seen a few weeks ago in the enjoyment of the most perfect health. The method by which labour was induced in that instance, was one which he (Dr. S.) hoped would never again be employed. At that time, the means most commonly adopted for the purpose was the injection of tepid water into the maternal passages; and the manner in which this process acted in bringing on labour was then a frequent subject of discussion. He had become convinced that its *modus operandi* depended on the separation, which it effected, of the membranes from

the interior of the uterus, and which he had come to regard as the exciting cause of parturition at the ordinary termination of a normal pregnancy. As the injection of water was attended with this drawback, that the bed and body-clothes of the patient became disagreeably moistened by the fluid that escaped, he determined to try whether the separation of the membranes might not be as effectually separated by some less discomforting means; and, accordingly, he attempted to effect his purpose by the injection of atmospheric air, in the case of a patient whom he had seen before in consultation with Dr. Smith, of Lasswade, and in whom he had induced premature labour on a former occasion. He introduced the air by means of a catheter passed into the interior of the uterus, between its walls and its contained membranes, on two successive days; and labour supervened within a few hours after the second inflation. In the case of Mrs. L., however, he had used neither water nor atmospheric air, but carbonic acid gas, which had just at that time been proposed as an oxytoxic by Scanzoni. The gas was introduced for the first time by means of a catheter on a Wednesday, and its injection was repeated once each day till the following Sunday. Labour-pains supervened on the Saturday, and continued feeble and intermitting till the Monday evening. The os uteri was firm and cartilaginous, and a number of small incisions were made into it, to favour the dilatation. The child was not born till Tuesday morning, or for six days after the first injection of the gas. The case, however, was so far successful. But he (Dr. S.) believed that a similar operation *ought never again to be attempted.* For, having happened soon afterwards to speak of these cases to some of his confreres in another medical school, one of them, who was induced to adopt the operation, had the misfortune to lose his patient. The gentleman in whose hands the accident happened was a distinguished and experienced practitioner, and performed the operation with every care and precaution; yet the patient died in the course of a few minutes. The fatal effect was probably due to the separation of a portion of the placenta, and the entrance of air through the uterine sinuses into the circulation. The case was not solitary, however; for Scanzoni had recorded two fatal cases of the injection of carbonic acid gas into the uterus; and in a case in which the artificial and criminal induction of abortion, at Philadelphia, was attempted by blowing in air into the uterus, the patient suddenly expired. He (Dr. S.) therefore maintained that the injection of air or gas of any kind into the interior of the uterus, for the purpose of inducing premature labour, was an operation which we were not entitled to repeat. He (Dr. S.) had many times had recourse to the injection of tepid water for the induction of labour—sometimes by means of Kiwisch's douche, which was a clumsy and inconvenient contrivance; more frequently by means simply of Higginson's syringe, the nozzle of which could be introduced within the os uteri. But, besides being attended with discomfort from the wetting of the bed, this operative procedure was open to the further objection, that it sometimes brought about a change in the presentation of the child. Moreover, he (Dr. S.) had been greatly alarmed by seeing a patient on one occasion faint under its use, probably from some of the fluid getting into the circulation. And in consultation practice he had seen two more alarming cases still, where both the patients died. In both, only a few ounces of water were injected; and yet rupture of the uterus took place. The occurrence of the rupture was to be explained, as he (Dr. S.) believed, by the fact, that the uterus being already fully distended, could not admit the few ounces of fluid necessary for effecting the separation of the membranes from its interior without being stretched and fissured to some extent; and during labour these slight fissures might easily be converted into dangerous and fatal ruptures. In one of the cases he referred to, the patient died before labour was completed; the other, in twelve hours after its termination. They both occurred in the hands of most accomplished and able accoucheurs; and he (Dr. S.) thought the procedure ought to be entirely set aside, or should be had recourse to only in some exceptional circumstances. Fortunately, we had other and safer means of effecting our object; and of these, perhaps, the best was that now in very common use in Germany, viz., the introduction of a flexible male catheter into the interior of the uterus between the membranes and the uterine walls, withdrawing the stilet and leaving the catheter there until labour set in.

The history of that operative procedure was, shortly, this: Dr. Hamilton used to bring on premature labour by separating the membranes from the interior of the cervix, to a distance of two or three inches, with his finger or a catheter. The plan was not very effectual, and required always to be repeated very frequently before labour supervened. About eight years ago, he (Dr. S.) had supposed that it might be produced more effectually by leaving a foreign body in the cavity; and chose as the subject of experiment a patient on whom labour had on two previous occasions been successfully induced by means of the water douche, and who had had several disappointments from habitual death of the fœtus in the two last months of utero-gestation. On the occasion referred to, the membranes were separated to a distance of two and a half inches from the interior of the cervix by means of an intra-uterine pessary, which was left permanently in the cavity, in the expectation that labour would speedily supervene. It was moved about from time to time, but no signs of approaching labour appeared. The fœtal heart continued to beat vigorously; and as it seemed quite probable that it might be carried to the full time with perfect safety, no supplementary measures were taken to insure the premature occurrence of parturition. The pessary was thus worn for thirty-one days in the cervix, and was frequently moved all round its interior, without the slightest effect; for labour only supervened at length on the completion of the full term of pregnancy. Believing that labour could be more certainly induced by the separation of the membranes from the interior of the *body* of the uterus, he (Dr. S.) had afterwards attempted to do this by passing the uterine sound to some distance into the interior of the uterus, and moving it slightly from side to side, taking care to avoid the site of the placenta. The success attendant on this form of operation was so great, that for some years past he (Dr. S.) had used the sound almost exclusively for inducing premature labour. It had one disadvantage, however, inasmuch as in some cases it was found necessary to introduce it several times before labour was finally brought on; and in one case that had occurred in his practice some months ago, six days elapsed from the time of the first introduction of the sound ere labour finally supervened. The retention of the flexible portion of the male catheter in utero overcame this difficulty. If placed between the uterus and membranes, labour seemed almost invariably to supervene within twelve hours. If its extremity chanced to perforate the membranes during its introduction, labour did not supervene in some instances for twenty or thirty hours longer. In Germany they were in the habit of introducing a gum-elastic male catheter into the uterus, and leaving it there with the stilet till labour supervened. Fearing lest the uterus might be injured by the presence of a firm foreign body, he (Dr. S.) had withdrawn the stilet, and left only the flexible catheter, which remained until labour supervened. Statistics of fifty cases that had been operated on by this means in Germany had been collected by Dr. Amann, who showed that, in all, labour had been induced within twelve hours. He (Dr. S.) believed, therefore, that it would be found to be an improvement in the operation to leave a foreign body in the cavity of the uterus; but perhaps an India-rubber tube or some soft body would be found to be as safe an instrument, and quite as successful a one, as the elastic catheter. Dr. Simpson added, that in some special cases other modes of treatment might require to be adopted, and stated, in particular, that where it was desirable to have the os uteri dilated to some extent before labour came on, the sponge- ent might be employed with advantage.—*Edinb. Med. Journ.*, Sept. 1861.

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65. *Anæsthesia in Midwifery.*—Dr. ANTONIO GUELMI, late assistant in the Obstetrical Clinic of Pavia, makes some practical remarks on the use of chloroform and ether in midwifery. He commences with the rapid *resumé* of the history of anæsthesia, and particularly dwells on the development of its application to obstetric cases, detailing the principal arguments, *pro* and *con*, which have been brought forward, especially in England, and declaring himself in favour of the use of anæsthetics in labour. He refutes, in succession, the well-known arguments—1. That, when operative interference is required during labour, the sensations of the conscious woman are our best guide in the application of instruments, &c. 2. That the fœtus is likely to receive serious damage from the

diffusion of the chloroform through its circulation. 3. That chloroform is liable to cause paralysis, convulsions, &c., in the parturient woman (here the author quotes Dr. Murphy's experience of the *curative* agency of chloroform in puerperal convulsions). 4. That the regular contractions of the uterus are necessarily suspended by anæsthetics. Following the description of Flourens, he shows that, according to the greater or less amount of the dose of the anæsthetic, very different effects may be produced. With small doses, you may get just sufficient anæsthesia to mitigate the pain of ordinary labour; with a larger quantity, you may enable the patient to undergo a surgical interference without any suffering; with a still larger quantity, you may procure a complete relaxation of the muscles of the uterus. Thus, there are evidently three degrees of anæsthesia which may be induced in labour, according to the exigencies of the particular case.

It is with regard to the use of chloroform for the purpose of relaxing uterine spasm, in the case of abnormal presentations, that Dr. Guelmi speaks most enthusiastically. He mentions a good case of his own bearing on this point, in which, by means of one short inhalation of chloroform, he was enabled so far to relax a rigidly contracted uterus, as to introduce his hand, and effect version with facility, and he quotes a case by Adrien Millet to the same effect.—*London Med. Rev.*, Sept. 1861, from *Annali Universali di Medicina.*

66. *Inversion of the Womb of Long Standing Reduced by Permanent Pressure.*—The following particulars are extracted by the *Gazette des Hôpitaux* from the pages of the *Deutsche Klinik*:—

A primiparous woman, aged twenty, was delivered with the forceps, in December, 1852, after twenty-four hours' ineffectual labour, and the after-birth was immediately extracted, several coils of the funis being twisted round the neck of the child. The patient became unconscious, although the hemorrhage does not appear to have been unusually considerable. For a long time after her confinement, the young woman continued an invalid, and suffered from paralysis of the bladder and swelling of one of the lower extremities; for six years she was subject to daily hemorrhage from the womb, in addition to menstruation, which regularly recurred every six weeks. Various methods of treatment were unavailingly resorted to, and in August, 1857, she was introduced to Mr. Brockendahl, who, to his great surprise, ascertained the existence of an inversion in the womb of the second degree. The uterus formed in the vagina an elastic pear-shaped tumour about two and a half inches in length, and pressure with the finger induced no other effect but an increase of the sanguineous discharge. A thin circular fold of the vagina closely embraced the womb, and might on superficial examination have been mistaken for the cervix. The speculum was inserted, and allowed of the inspection of the dark red mucous lining of the viscus from which blood was seen to exude. The vagina and all the other mucous membranes of the patient were pale, and testified to her state of confirmed anemia.

The displacement, in all probability, had taken place gradually; and as no sign of peritonitis had ever been present, Mr. Brockendahl determined, although the inversion was complete and the viscus thick and unyielding, to make an effort at reduction. After reiterated warm baths, he attempted to insert the entire hand into the vagina, but without success, the external aperture of the duct being much contracted by a scar consequent upon laceration of the perineum. The treatment was then discontinued, and the patient was lost sight of until October, 1858, when the surgeon, dreading the use of rigid instruments, each day endeavoured to soften the womb by kneading it with the hand, in hopes that its texture, thus rendered more yielding, might admit of the fundus being re-inverted. Mr. Brockendahl was, however, compelled by the reappearance of the menses to discontinue these manipulations, and he again lost sight of his patient for some weeks.

In November, having read an account of Dr. Tyler Smith's case, he resolved to try the effects of continuous pressure; one of Braun's India-rubber pessaries was accordingly inserted into the vagina on 27th November. This appliance was removed daily, for the purpose of judging of its action, replaced after being

filled with water, and further distended to the utmost by insufflation. The instrument gave rise to no symptom beyond a little uneasiness, which lasted a couple of hours after its reintroduction. On the 2d of December, as some pain in the abdomen was complained of, the pessary was extracted, and the organs were examined. Mr. Brockendahl was much astonished to find that the inversion had disappeared, the cervix admitted of the insertion of three fingers, and its labia were well defined. The womb was measured and was found to exceed, by more than half an inch, its usual dimensions. The cold douche soon restored the viscus to its natural size, and the hemorrhage, which had lasted so long, ceased, and has not since returned.—*Glasgow Medical Journal*, July, 1861.

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67. *Puerperal Fever.*—Dr. W. T. Fox read an interesting paper on this disease before the Obstetrical Society of London, November 6, 1861.

This paper was intended as an abstract of the history of puerperal fever as it occurred at the General Lying-in Hospital from 1833 to 1858, both inclusive. It appeared from statistical evidence that 180 deaths occurred out of 5,833 labours, giving the very high death-rate of 3.085 per cent. The author then proceeded to show that from the want of a clear understanding of the nature of puerperal fever, much had been mixed up under the head of the latter which was foreign to the subject; that disease in the puerperic took on an abdominal aspect, and so offered deception; that the history of the childbed fever appeared to be a compound of acute specific diseases—local inflammatory conditions—diseases characterized by severe pain and excess of normal reaction; that after eliminating these, the major part of the cases forming true puerperal fever remained, which were explicable, according to the clinical history of the General Lying-in Hospital, by erysipelas; that in tracing the connection between erysipelas and puerperal fever, the different epidemics formed links in the chain of gradation and identity; that all the symptoms of intense puerperal fever were produced in cases in which the most decided evidence of erysipelas alone existed, and therefore the assumption of a special peculiar disease *sui generis* (puerperal fever) was unnecessary; that in the case of primiparæ, lacerations to an appreciable extent being the rule, great facility of ingress and onset, so far as the poison of erysipelas is concerned, is their chief source of liability to attack, which latter appears statistically to be true; that with reference to puerperal pyæmia, it merely forms a feature alike common to all acute specific diseases (most especially, however, of erysipelas), being unaccountable for by the doctrine of phlebitis, of thrombosis, of a pyohæmia, and consisting of a general process of abscess, called into action as a special eliminant, when the ordinary agencies fail to expel a virus, and carried on by a relative process between the tissues (connective) and the blood-current, in which thrombosis is common; and lastly, that much of the mortality is preventable. The propositions were supported by cases.

Dr. TYLER SMITH said the subject of puerperal fever was the most important which could occupy the attention of the Society. The whole obstetric mortality of England and Wales exceeded 3,000 annually. Of this number of deaths more than 1,000 women, or nearly three daily, fell victims to puerperal fever; and it was the healthy and vigorous primipara whom it was most prone to attack. The obstetrist could put before him no nobler object than the diminution of this mortality. Unhappily, we could not look to treatment to accomplish this. Under various circumstances, and in different countries, every variety of treatment had been tried and been found wanting. If not curable, it was however preventable. It was not, therefore, to treatment, but to prevention, that we must look for the means of dealing with it successfully. If epidemics of puerperal fever were less rife now than in former times—and at present they rarely occurred, except from the crowding of women in lying-in hospitals—it was because we lived under better sanitary conditions, and paid more especial attention to preventive measures. We should surround every lying-in woman, as far as possible, with antiseptic precautions. Nothing, he believed, would tend more to diminish the frequency of puerperal fever than the full recognition of its infectious and contagious nature, in whatever way it first occurred. It would not so often happen if all accoucheurs recognized the fact that erysipelas, typhus, scarlatina, small-pox, hospital gangrene, putrid sore-throat, diphtheria, the *post-mortem* and other

poisons were excessively prone, if brought near the lying-in woman, to originate puerperal disease. He did not question but that any of the agents which produced zymotic maladies might cause puerperal fever, or that it might arise in individual cases from the retention and putrefaction of portions of placenta or membrane or coagula, or the decomposition of fibrinous clots in the uterine vessels, especially in women who were predisposed by hemorrhage, albuminuria, or other causes of debility; but contagion and infection, which might to a great extent be recognized and avoided, were its chief and most preventable sources. If all our means, in the way of prevention, were habitually brought into operation, he did not doubt that puerperal fever, instead of being the highest, might become a very moderate cause of obstetric mortality.—*Medical Times and Gazette*, November 23, 1861.

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68. *The Pathogeny of Retro-uterine Hæmatocele.*—Prof. Braun, of Vienna, has reported ten cases of retro-uterine hæmatocele; and the following are some of the conclusions at which he has arrived: 1. In the ten cases, the diagnosis was made with certainty in eight, and with probability in two. Nine of the patients recovered perfectly; in the fatal case, there were extra-uterine pregnancy and obsolete peritonitis. In seven cases, the indications afforded by exploratory puncture were very encouraging. Puncture and entire evacuation of the tumour was followed by cure in six cases; in three, recovery took place under passive treatment. In six cases, the hæmatocele was retro-uterine; in four, antero-uterine. In none of the cases did the extravasation surround the uterus; it was always confined to one-half of the pelvis. 2. Rapid cure may follow the emptying of the hæmatocele by puncture; the fertility of the patient is not destroyed; and a subsequent pregnancy and parturition may follow their normal course. 3. Movable pelvic tumours, which careful palpation and examination show to be probably hæmatoceles, are recovered from under or after inunction of iodine and glycerine. 4. The quantity of blood contained in a uterine hæmatocele may vary from a few drachms to several pounds. 5. The blood extravasated in the neighbourhood of the uterus undergoes a metamorphosis; the corpuscles become broken up, and their membranes appear flabby and eroded; they do not undergo putrefaction, and immediately after evacuation do not bruit a putrid smell. When the hæmatocele is of long standing, dark brown spots are formed on its walls; the blood-corpuscles are absorbed, and a greenish yellow fluid is left, having the specific gravity of the blood-serum, with an alkaline reaction, and containing albumen, a very large amount of albuminate of soda, a little biliverdin, no ammonia, very little sugar, but the salts of the blood-serum, with a preponderance of the chlorides. The fluid removed by the trocar from the hæmatocele generally contains blood of a tarry, ropy consistence, not of bad odour, with numerous patches of pigment, and with hæmatin; it also contains crystals of ammonio-phosphate of magnesia. 6. During the existence of a hæmatocele, menstruation sometimes runs a normal course, without pain; sometimes it is very profuse and painful, and is generally attended by enlargement of the blood-cyst; sometimes hæmatocele exists coincidentally with menorrhagia of several months' duration. Intense anæmia is generally only observed where the hæmatocele is complicated with menorrhagia; without this, its presence is compatible with the retention of a healthy colour of the face. 7. The growth of a hæmatocele is sometimes slow, sometimes very rapid. It may in a few days attain the size of a man's head; and in this case the symptoms are generally those of an internal hemorrhage. 8. Some days after the emptying of a hæmatocele, the exudation acquires a penetrating odour, which may be removed by careful injection of the cyst with warm water. 9. Menorrhagia occurring in conjunction with a hæmatocele soon ceases, as soon as the hæmatocele is perfectly emptied. 10. Prolapsus of the vagina may be produced by hæmatocele, with or without the presence of pregnancy. 11. In the highest grade of antero-uterine hæmatocele, the tumour reaches downwards lower than the orifice of the urethra, and upwards as far as the umbilicus. 12. The bladder and uterus are generally pushed upwards by the tumour, more frequently forwards, rarely backwards and to the side. The direction of the displacement may be ascertained by careful catheterization. A hæmatocele projecting into

the vagina is not reduced in size when the bladder is emptied by the catheter. 13. Hæmatocele may be induced by extra-uterine pregnancy, when apoplexy of the ovum and extravasation of blood takes place. 14. Secretion of milk appears not to accompany hæmatocele, unless pregnancy be also present. If there be lacteal secretion in a case of hæmatocele, when the uterus is evidently empty, there is probably an extra-uterine pregnancy. 15. Extra-uterine blood-tumours occurring during pregnancy may fill nearly the whole pelvis, and, lying behind the urethra, may produce the same troubles as vaginal cystocele, or hernia of an ovarian cyst into the vagina. 16. Exploratory puncture forms the only absolutely sure means of diagnosis between ovarian tumours and uterine hæmatocele.—*Brit. Med. Journ.*, Oct. 12, from *Wiener Med. Wochenschr.*, Aug. 31, 1861.

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69. *Coccyodynia.*—M. GOSSELIN has recently had under his care, at the Hôpital Beaujon, a case of coccyodynia, the disease made celebrated by the recent admirable researches of Dr. Simpson, of Edinburgh. The patient was a young woman, who, shortly after her first confinement, began to experience severe pains on going to stool, and soon even sitting, unless she adopted a sideway position. Pressure over the coccygeal region much aggravated these pains. M. Gosselin considered that the seat of the pain was in the sacro-coccygeal joint, and that the original cause of it was the strain to which that articulation had been subjected during labour. A number of topical sedative applications were tried, including the use of a subcutaneous injection of sulphate of atropia, without the slightest relief. Subcutaneous section of the muscles attached to the coccyx, after the plan of Simpson, was then tried, but with equally futile results. Hesitating to adopt the extreme measure of *removal* of the coccyx, M. Gosselin again had recourse to palliative measures, and now suggested the simple use of an India-rubber air cushion; and after the patient had steadily continued this plan for twelve days, she had so far lost her pains as to be discharged from the hospital in a fair way of convalescence, since nature herself, the stress on the parts being taken off, would, doubtless, complete the cure, under the favouring auspices of *rest*. It may be mentioned that it was found necessary to regulate the bowels by a rhubarb aperient, so as to prevent *hard motion* from passing over the tender part. The editor of the *Gazette des Hôpitaux* quotes a similar case, cured in a similar way, which fell under his own notice some years ago.—*London Medical Review*, November, 1861.

MEDICAL JURISPRUDENCE AND TOXICOLOGY.

70. *Antagonism of Aconite and Strychnia.*—Dr. WOAKES relates (*British Medical Journal*, October 26, 1861) a series of experiments made on dogs to ascertain the applicability of aconite for the relief of poisoning by strychnia. The following is a brief outline of these experiments, with the conclusions to which they have led him:—

Expt. I. A small, weakly terrier had one-fifth of a grain of strychnia in solution injected into the throat. In ten minutes the hind legs began to stiffen; and, after a few convulsive movements, the whole body became so rigid that he could be held out horizontally by one leg. When the animal was thus fully under the influence of strychnia, eight minims of tincture of aconite in water were similarly injected. In about two minutes, the spasm relaxed; the muscles, from being hard as wood, became soft; and the heart, which had been beating too fast to count, gradually calmed down; and, when just about to congratulate myself on the happy effects of my antidote, I found the beast was dead. Death did not result from the strychnia, however, but from the aconite, which I had given in a powerfully poisonous dose for so small an animal; the relaxed condition of the muscles, the effect of the aconite, being very characteristic, and totally opposed to the rigidity following death by strychnia.

Expt. II. Instructed by the preceding experiment, I proceeded more cautiously with the next. The subject of it was a large mastiff, not very docile under treatment. Less than one-sixth of a grain of strychnia produced rigidity. When this was fully established, six minims of tincture of aconite were given in divided doses. During its exhibition, the spasms gradually subsided; and in about forty minutes left the animal entirely, without any ill effect.

Expt. III. Having satisfied myself of the ameliorating effect of aconite on the spasms caused by strychnia, the next object was to ascertain, if possible, how much aconite would so far antagonize a given amount of strychnia that symptoms of neither drug would occur. The subject of the experiment performed with this object in view was a small cur. To it one-tenth of a grain of strychnia, with two minims and a half of tincture of aconite, were given. There being no effect at the end of half an hour, a further dose of one-fifth of a grain of strychnia, with three minims of tincture of aconite, was given. After another half hour, there being no effect, one-fifth of a grain of strychnia, with three minims of tincture of aconite, were given. Slight stiffness supervened; but no spasm. The animal had now taken half a grain of strychnia, a poisonous dose for a small dog; and in about ten minutes after the last dose, an extremely severe spasm ensued. Five minims of tincture of aconite, administered immediately, were followed by sudden restoration. In a few minutes a succession of severe spasms ensued, in each of which three minims of tincture of aconite were given with slight temporary benefit. A still severer spasm followed, and was quickly subdued by five minims of the aconite. This had soon to be repeated, and with like success. It was now necessary to give brandy, each allowance of which contained from three to five minims of tincture of aconite. They were squirted down the throat. The dog remained in this state for two hours, when sleep occurred. After this, the attempt to swallow some milk induced another attack, which speedily subsided of itself, and was the last. In a few hours, this canine patient was as well as usual.

The conclusions to which my observations upon the antagonism of the two drugs now under consideration have led me, are briefly as follow:—

1. In cases of poisoning by strychnia, it is the violence of the spasms which is the chief source of danger, the patient usually dying from the immediate effect of these, rather than from the exhaustion consequent upon the attack. It is the peculiar action of aconite to diminish the intensity, as well as to shorten the duration, of these spasmodic contractions.

2. The influence of aconite in this respect is very transitory, requiring the dose to be cautiously repeated, according to the urgency of the symptoms.

3. Nevertheless, we are not to regard strychnia and aconite in the light of bane and antidote, as the only antagonism between them is a physiological, and not a chemical one; the contractile power of the muscles being strongly excited by the one, and powerfully relaxed by the other.

4. From this fact alone, it is probably impossible so to adjust the dose of each drug that both may be administered simultaneously, and the balance of the system remain undisturbed.

5. While the antagonism above alluded to is taking place, if the system be properly supported by stimulants, etc., strychnia will be gradually eliminated from it, and so the cure completed.

It should be stated that my attention was first called to the use of aconite in traumatic tetanus by reading the details of a case successfully treated by this remedy recorded in the *British Medical Journal* for January 28, 1860, by Dr. Sedgwick.

It remains to test the accuracy of these conclusions by observations in the human subject.

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71. *Experiments on Slow or Chronic Poisoning.*—Dr. George Harley read (November 12, 1861) an interesting paper on this subject before the Royal Medical and Chirurgical Society. He began his elaborate paper by referring to the great importance of the subject of slow or chronic poisoning to the medical profession as a whole, and to toxicologists as a class. The symptoms produced by the slow introduction of poison into the system so closely resemble those that

are every day met with in natural disease, that unless one's suspicions are accidentally aroused the effects of the one cannot fail to be confounded with those of the other. Many of the anomalous cases which every now and then occur, and embarrass the practitioner, may be cases of chronic poisoning, if not even of secret murder. It seems a hard accusation to make against civilized society, but Dr. Harley nevertheless believes it to be just, that the cases of poisoning which are discovered form but a small percentage of those that actually occur. Modern physiology and chemistry have rendered it possible not only to distinguish between the effects of acute poisoning and disease during life, but also to separate and identify in many cases the toxic substance after death. Slow or chronic poisoning has, however, received little or no attention, and may therefore be said to be yet in its infancy. With the view of obtaining some information on this subject, the author has, during the last two years, carried on a series of experiments on animals with small doses of poisoning, slowly administered. Although he has already investigated the effects of several of the mineral poisons, his remarks were on this occasion limited to the subject of arsenical poison. The author briefly related several of the experiments he had performed, some of which lasted but twenty-five minutes, while others had extended over a period of eighty days. In the first case, one grain of common arsenic was injected into the jugular vein of a cat. In three minutes convulsions commenced, and in the short space of twenty-five minutes the animal was dead. In the case referred to where the animal lived eighty days, the dose was gradually increased from a quarter of a grain to one grain. In all, forty-nine grains of the poison were taken; and at death the animal presented in a marked degree the effects of chronic poisoning. (The paper was illustrated with numerous water-colour drawings of the different *post-mortem* appearances observed in the various cases.) It appears from these researches that the effects of arsenic on the digestive canal differ in the acute and chronic form of poisoning. So different, indeed, are the morbid changes presented in the two cases, that the effects of the one could never be adduced from those of the other. The more chronic the action of the poison, the more uniformly are its effects distributed over the digestive canal; whereas, in the acute form of poisoning, the effects of the toxic agent are more especially observed in the stomach. The author also related some researches he had made regarding the direct action of the poison on the blood, and from which he had ascertained that arsenic has the power of retarding the metamorphosis of the constituents of that fluid, and thereby affecting the tissue-change. The conclusions drawn from the author's researches are—1st. That arsenic has a specific action on the digestive canal. 2d. That the action of arsenic on the digestive canal is manifested irrespectively of its mode of administration. 3d. That the direct contact-action of arsenic with the mucous membrane is slight in comparison to the influence it exerts through the blood. 4th. That the symptoms manifested during life, as well as the morbid changes found after death, differ very materially in the acute and chronic forms of poisoning. 5th. That whereas in the acute form of poisoning the morbid changes are most marked at the cardiac end of the stomach, in the chronic form they are most visible towards the pyloric extremity. 6th. The more gradual the poisoning, the more manifest is the action of the poison on the intestines, and the less visible are its effects on the stomach. 7th. Death may occur from arsenic so rapidly that no apparent structural change has time to occur. 8th. That the immunity from symptoms of poisoning enjoyed by arsenic eaters most probably arises from their taking the substance in a solid form, and consequently that but a very small portion of what is swallowed enters the circulation. 9th. That the beneficial effects of small doses of arsenic are due to the power it possesses of diminishing tissue-change by its peculiar action on the blood. 10th. That the prejudicial effects of arsenic, when taken in excess, are due to its destroying the property possessed by the constituents of the blood of combining with oxygen, and thereby becoming fitted for the purposes of nutrition.—*Medical Times and Gazette*, November 23, 1861.

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72. *Poisoning of Watchmakers by Copper.*—Dr. PERRON, of Besançon, has made some researches on the above subject, which are of interest. For several

years the manufacture of watches in Besançon has greatly increased; there are now about 300 watch manufacturers, who employ about 3,000 workmen. These workmen continually handle gold and copper, and statistical observation has proved that mortality by consumption is exceedingly great in this class. Out of 200 deaths in watchmakers, no less than 127 are caused by tuberculosis, and of the deaths by consumption in the whole population of Besançon, the watchmakers furnish 40 per cent., while the proportion of the number of watchmakers to that of the other population is not 5 per cent. Dr. Perron believes the following to be the causes of this great mortality: The sitting posture which the men are obliged to retain for so many hours in the day, and the necessity of remaining in a cold room without exercise; the irritation of the lungs by the metal dust; and the paroxysms of fever, caused by the absorption of copper. The latter is thought to be the most important cause, by Dr. Perron, and he gives the following description of the symptoms of chronic poisoning by copper, as they occur among these men: The pulse is frequent, the skin hot, the throat dry; most of them complain of pain in the epigastrium, in the region of the kidneys, and in the head; many suffer from indigestion, enteritis, diarrhœa; and others have a feeling of constriction, and an acute pain in the throat. The teeth are in nearly all such cases coloured more or less green, and almost bronzed. These symptoms are especially striking in the apprentices, who are almost exclusively occupied in filing copper. Many get accustomed to the injuries of their avocation, but others become so ill a few weeks after having first entered the shops, that they can no longer continue to work, and are compelled to embrace another calling.

In many cases the symptoms take a very severe form; acute colics, fever, burning thirst, vomiting, diarrhœa, or obstinate costiveness which lasts from twenty-four to thirty-six hours, are observed. The nutrition is also mostly impaired, the muscles are badly developed, the complexion haggard, the look miserable. The continual absorption of small doses of copper, and its local and direct action, the frequent repetition of toxic and febrile symptoms, and the cachexia at last produced by it, are the causes of the prevalence of consumption among these men. Dr. Perron proposes as a prophylactic measure, that emaciated persons with tuberculous diathesis, should not be allowed to continue this calling, and to recommend as much exercise as is possible, abundant and succulent food, ventilation of the workshops, great cleanliness, baths, the use of aperients and diaphoretics, and the wearing of moustaches.—*Medical Times and Gazette*, November 9, 1861, and *Gaz. Méd. de Paris*, Nos. 39, 40, and 44. Oct., Nov., 1861.

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73. *Chronic Poisoning by Arsenic and Copper, consequent on prolonged habitation in rooms painted with Scheele's Green.*—M. Lorinser, after a *résumé* of the facts observed by former writers, relates several cases in which persons inhabiting rooms painted green, exhibited remarkable symptoms, which were proved by the analysis of the paint, and of the urine of the patients, as well as by the fact that recovery succeeded removal, to be dependent on mineral poisoning. The following is among the most interesting: A woman, aged fifty-four, was affected at various periods with lancinating, erratic pains referred to the shoulder-joint and nucha, and accompanied with fever. These phenomena increased from year to year until the winter of 1857–58, when the patient became languid, and lost flesh and appetite. She left town, and got well. Towards the end of summer, she returned to her home at Vienna, and rode on horseback daily. In November she was seized with violent fever, lancinating pains in the head and shoulders and subsequently profuse perspirations, followed by disappearance of the fever. The lancinating pains diminished, but she experienced extremely painful sensations of irritation and distraction in the head. These returned regularly every other night, and lasted till morning, the attack always terminating in abundant sweating. The lancinating pains continued in the shoulders, arms, and epigastrium, after the subsidence of the attack. There was complete anorexia, with a clean tongue. Sulphate of quinine, in eight-grain doses, produced no effect.

On analyzing the green paint, it was found to consist of arseniate and acetate

of copper. The patient was treated with iodide of potassium, about two and a half grains three times a day, during which treatment arsenic was contained in the urine in such quantity that its presence could be easily made evident by Marsh's test.

A female, aged seventeen, inhabiting a small room coloured with Scheele's green, was attacked with languor, anorexia, headache, loss of flesh, attributed to amenorrhœa, and had been unsuccessfully treated by steel and a tonic regimen. Languor increased; she became weaker, paler, and thinner, and finally lost her sleep, and became affected with nausea and vomiting. She was removed from her room, and put on iodide of potassium; after which she recovered rapidly.

A female, aged forty-five, contracted typhoid fever; in five weeks she was convalescent, but did not recover strength. She had extreme anorexia, sleeplessness, excessive muscular weakness, with a clean tongue and natural pulse. This continued more than a month, and became aggravated by tremors of the hands, and racking pains in the feet. She rapidly got better on removing from her room. Arsenic was discovered in the urine.

A female, aged twenty-four, was similarly attacked with typhoid fever; after which, she fell into a state of debility, which lasted for two years and a half. The catamenia became irregular; she lost appetite, became sleepless, and complained constantly of drumming in the ears. Neither quinine nor iron did good; but she recovered immediately on leaving Vienna. On subsequently returning, the old symptoms reappeared, accompanied with gastralgia, itching of the skin, with occasional nausea and vomiting. Arsenic was discovered in her urine. The green colour was removed from the walls of her room; she rapidly recovered.

The author concludes, from his experience, that the arseniate of copper enters the organism by the lungs in the form of dust. "The better the colour is prepared, and the less the walls are swept, the less powder is detached. If, on the contrary, the colour contains little glue, or is old and deteriorated, a larger quantity of dust is detached." The author does not pretend to determine what are the characteristic symptoms of this kind of poisoning. He calls attention however, to the dyspepsia, epigastric pain, the peculiar perversions of cutaneous sensibility, and the headache, as being most distinctive.—*New Syden. Soc. Year-Book*, 1860, from *Wiener Med. Wochensch.*, Nos. 43, 44, 1859.

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74. *Impregnation of Snuff with Lead.*—SONNENKALB relates nineteen characteristic cases of saturnine poisoning, dependent on this adulteration, in fourteen of which there was paralysis, the remaining five being characterized by gastric symptoms. In the former cases the upper extremities were, for the most part, exclusively affected; and in those in which there was paralysis of the lower limbs it was with one exception preceded by affection of the upper. In one instance slight and transient paralysis of the left side was preceded by three quasi-apoplectic seizures occurring in the course of five weeks. In eighteen cases the onset of the disease was unaccompanied with fever and increase of temperature. In thirteen there were paralysis and atrophy of the extensors, the supinators remaining entirely free from paralysis, and for the most part from atrophy. In four there was arching of the metacarpal bones; and in one the carpal joint was painful on movement, and its synovia was increased. Lead colour of the gums was observed in twelve cases. In all the nineteen the patient was subject to abdominal symptoms, such as colicky pains, and constipation, &c., often for several years. The periods for which the poisoned snuff had been used varied from six months to twenty years. All improved rapidly, and got eventually well on leaving it off. The author considers that the lead is introduced into snuff entirely from the coverings of lead in which it is packed.—*Ibid.*, from *N. deut. Zeitsch.*, vol. xiii. pt. 2.

AMERICAN INTELLIGENCE.

ORIGINAL COMMUNICATIONS.

A New Instrument for Craniotomy. By LEWIS D. HARLOW, M. D.—This instrument, Figs. 1 and 2, which I have named the cranio-diaclast (signifying an instrument for *breaking through* the skull), or, more briefly, the *diaclast*, is unlike any other heretofore in use, as will be seen by the following description.

The handle and shank are similar to those of the common trocar, differing only in respect to size, and are, when measured together, eleven inches in length. But the chief peculiarity of the diaclast is that portion used for perforating the head.

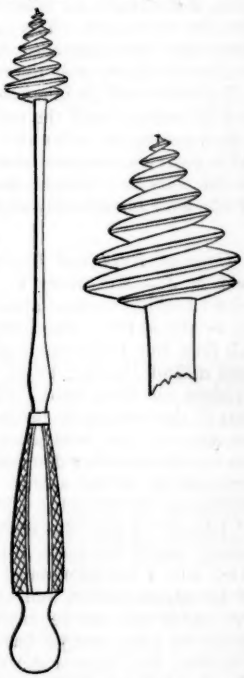
This consists of a large cone-shaped screw, resembling in form a boy's top, with which every one is familiar. Its length, and the diameter of its base are *equal*, each being one inch or a little less.

The threads of this spiral cone, or conoid screw, are small and near together just at the point, but increase regularly and rapidly, in size and distance, and become rounded and smooth as they wind from the apex to the base. They present, therefore, no sharp, cutting edges, by which the soft parts of the mother can possibly be wounded; the point only requiring to be guarded until brought in contact with the child's head.

The small end is like that of a common pointed screw, and is made of the best tempered steel. It readily penetrates the cranium by a semi-rotary, drilling motion, and enters, by a few facile turns, wholly within the cavity. This entrance is effected (after the penetration of the point) by the mechanical power of the screw alone; as the spiral beyond the point has no *cutting* edge; but that power has been proved experimentally to be amply sufficient.

As it makes its way through the skull, the bone is broken in pieces, and the fragments are forced asunder, as if the head were being riven by a wedge. Its withdrawal in a direct line requires considerable force, but has the advantage of still further breaking up the bones and leaving in the cranial vault a large open rent, through which the craniotomy forceps can, without difficulty, be passed.

Fig. 1. Fig. 2.



(CRANIO-) DIACLAST.

FIG. 1.—View of instrument, reduced size.

FIG. 2.—Screw, natural size.

On making trial of this instrument upon well ossified heads of stillborn children, it was found to penetrate, with the greatest ease, the base of the skull or the face, at any point, and separate the fractured pieces, at the will of the operator; thus showing its perfect adaptation to cases of breech-presentation (after the body has been delivered), and of face-presentation, when these are complicated with so great pelvic deformity as to render embryulcia unavoidable.

The advantages of the diaclast may be summed up as follows:—

1st. It is simple in construction.

2d. It is perfectly safe.

3d. It may be used with the greatest facility.

4th. It is efficient and adapted to all cases.

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Luxation of the Femur of fifteen days' standing reduced by Manipulation. By J. M. IRVINE, M. D., of West Barre, Hunt County, Pa.—I was called, January 21, 1859, to see a maiden lady, 68 years of age, who, fifteen days previously, had slipped and fallen on her right limb, which caused it to swell and become intensely painful, the pain being located in the hip-joint. A practitioner was called in who pronounced it a sprain of the hip-joint, and ordered an anodyne liniment to be applied to the part, and left the case to nature. The pain continuing unabated I was called in and found the limb shortened fully three-fourths of an inch, everted, and the head of the femur over the pubis and pushed under Poupart's ligament.

I administered by inhalation a mixture of equal parts of sulphuric ether and chloroform until the patient was under the influence of the anæsthetic. I then proceeded to flex the leg on the thigh, and the thigh on the pelvis. After carrying the knee over the umbilicus I carried it over to the left side of the body and brought the limb into a state of extension, when the head of the bone immediately slipped into the acetabulum with an audible snap.

—

Case of Ruptured Uterus. By NATHAN S. KING, M. D., of Bloomfield, N. J.—Mrs. Mary V., aged 31 years, a native of Ireland, a strong, robust looking woman, about two weeks before her confinement applied to me to attend her. She stated that she had given birth to three children at full time, but that from some deformity of her pelvis her labours had all been difficult, having to be terminated by the use of the forceps, and the children all being dead. She said she was advised by her last physician that if she ever again became pregnant to have labour produced at seven months. A few days after I called, and, making an examination, found the antero-posterior diameter somewhat diminished, the projection of the promontory of the sacrum increased, and an increase downwards of the inclination of the pubis. She had at this time the premonitory symptoms of labour. I was able easily to make out a natural presentation. I left, merely giving her some general directions. At 7 o'clock the next evening (Oct. 24), I was summoned in haste to Mrs. V. I found the contractions of the uterus violent and almost continuous, the os uteri well dilated, but the membranes not yet ruptured, and the head of the child resting firmly on the os pubis, not yet having engaged in the superior strait. Her bowels had been well opened during the day and she had continued to urinate freely. The pains still continuing severe, and no change being perceptible in the position, I soon placed her on her back, ruptured the membranes, and with my hand endeavoured to depress the head from the pubis, but with no success. The pains continued violent, almost throwing the patient

into convulsions, until about 11 o'clock, when the pains suddenly ceased and the child somewhat receded, with a considerable gush of blood from the vagina; yet the patient made no exclamation that anything had occurred, as they are often described as doing in a case of ruptured uterus. Having a pair of short forceps at hand I endeavoured to reach the head, but was unable to. Vomiting coming on and the patient beginning to sink, and desiring to be let alone to die, I immediately sent for assistance and began to give her stimulants. Assistance soon arriving, and her pulse having somewhat improved, we proceeded to deliver her by turning. The feet were easily found and brought down, but it was with great difficulty that the head could be delivered. At first I could not find the placenta, but by tracing up the cord it was found escaped from the cavity of the uterus through a rent on the right side of the body; by strong traction on the cord it was finally withdrawn. The uterus seemed to contract but very little. I immediately gave her an anodyne with directions to continue it every hour until patient became quiet. The next morning I found her as comfortable as could be expected, having become quite easy since 7 o'clock, with one or two short naps. Pulse fair, about 100. Pain not severe though considerable tenderness, especially on the right side. Continued anodyne with calomel every three hours, with a poultice over the whole abdomen. She continued quite comfortable during the day. Next morning found her not as well. Pain and tenderness increased, with occasional vomiting during the night. During the forenoon vomiting came on almost continuously of dark green and watery matter, which continued until 3 P. M., when it entirely ceased. In the evening found her rather more comfortable. Pulse 110. Pains not great but extremely tender on pressure, with great tympanitis. Continue the same treatment. About 2 o'clock A. M. was called to patient and found her in collapse. Pulse not discernible. She continued perfectly conscious until 4 o'clock, when she died, being fifty-two hours from her delivery. No post-mortem was allowed.

DOMESTIC SUMMARY.

Treatment of Fractures by Plaster of Paris Splints.—Dr. Jas. L. Little, Resident Surgeon to New York Hospital, highly extols (*American Med. Times*, Dec. 7, 1861) plaster of Paris splints in the treatment of fractures. The advantages of this apparatus are, he states, "its facility of application, and its perfect adaptation to the limb, being borne by the patient better than any other form of apparatus. Although we have applied it more than twenty times, and in every case directly against the integument, yet in no instance has it given rise to any undue pressure over the malleoli or heel—points which are apt to trouble the surgeon considerably. Another interesting feature may be stated, that it has never produced any excoriations, but, on the contrary, in several instances where it has been applied over denuded surfaces, it has apparently exercised a healing effect.

"Its advantages over the starch bandage are its rapidity of drying and hardening, the plaster taking about five minutes 'to set,' *while being held by the surgeon in its proper position;* the starch apparatus requiring several days to dry unless artificial heat is applied. Another advantage is, that the limb can be inspected daily if necessary, without removing all the apparatus. It, therefore, can be applied much earlier than we have been in the habit of resorting to the starch bandage. It may be well to state that the starch apparatus has been generally used in the New York Hospital only after the fracture has become tolerably firm, since in several instances where it has been applied early in the

treatment, marked deformity has resulted. But the plaster of Paris casing allows the anterior surface of the limb to be exposed, and any displacement can consequently be readily detected.

"Its advantage over the gutta percha is its great *porosity*, keeping the limb perfectly dry without confining the perspiration, and thus doing away with one cause of irritation and excoriation. It does not require padding like the gutta percha, and it is much cheaper, an important item in hospital practice.

"*The mode of application to the leg is as follows:* The limb is first shaven or slightly oiled; a piece of old coarse washed muslin is next selected of a size so that when folded about four thicknesses it is wide enough to envelop more than half of the circumference of the limb, and long enough to extend from a little below the under surface of the knee to about five inches below the heel. The solution of plaster is then to be prepared. Fine, well dried, white plaster had better be selected, and before using a small portion should be mixed with water in a spoon and allowed 'to set,' with a view of ascertaining the length of time requisite for that process. If it is over five minutes, a small quantity of common salt had better be dissolved in the water before adding the plaster. The more salt added, the sooner will the plaster 'set.' If delay be necessary, the addition of a few drops of carpenter's glue or mucilage will subserve that end. Equal parts of water and plaster are the best proportions. The plaster is sprinkled in the water and gradually mixed with it. The cloth, unfolded, is then immersed in the solution and well saturated; it is then to be quickly folded as before arranged and laid on a flat surface, such as a board or a table, and smoothed once or twice with the hand in order to remove any irregularities of its surface, and then, with the help of an assistant, applied to the posterior surface of the limb. The portion extending below the heel is turned up on the sole of the foot, and the sides folded over the dorsum and a fold made at the ankle on either side, and a roller bandage applied pretty firmly over all. The limb is then to be held in a proper position (extension being made if necessary by the surgeon), until the plaster becomes hard. The time required in preparing the cloth, mixing the plaster, and applying the casing to the limb, need not take more than fifteen minutes. After the plaster is firm and the bandage removed, we will have a solid plaster of Paris case partially enveloping the limb, leaving a portion of its anterior surface exposed to view. If any swelling occurs evaporating lotions can be applied to the exposed surface, and we can always easily determine the relation of the fractured ends. If necessary, an anterior splint, made of the same material, can be applied, and then both bound together with adhesive plaster, and if desirable, a roller bandage over all. If the anterior splint is not used, two or three strips of adhesive plaster, one inch wide, or bands of any kind, may be applied around the casing, and will serve to keep it firmly adjusted to the limb. Thus applied, we have a most beautiful splint, partially enveloping the limb, making equal pressure, light, and allowing the patient to change his position in bed, or to sit up in a chair, or go about on crutches; and a splint which can be easily made in any place where plaster is to be had.

"This mode of dressing may be applied with great advantage in most cases of fractures of the tibia and fibula. In oblique fractures of the tibia with the projection of the superior fragment, it is well known how difficult it is to overcome the deformity; with the plaster of Paris splint, however, the results have been all that could be desired. After extension of the limb on the part of an assistant for the sake of bringing the fragments into perfect apposition, and while thus held, the plaster splint should be applied and allowed to harden.

"The limb is thus perfectly immovable. A strip of two or three thicknesses of muslin, about three inches wide, saturated with the plaster, may be applied transversely, if necessary, over the upper fragment, so as to bind it down in position. The cases in which this mode of dressing is not applicable, are those of fracture of the fibula with rupture of the internal lateral ligament, or, what is more common, a chipping off of a portion of the internal malleolus with the turning of the foot outwards. Where the deformity is considerable it cannot always be overcome at once, but requires steady pressure, with properly arranged pads, and the side splints, to bring out that result. This effected, to a certain extent, the plaster apparatus may be applied with advantage. In cases of fracture of

the fibula, without any displacement of the foot, it may be applied early in the treatment; upon the entire subsidence of the swelling it will become necessary to apply a new one. This second dressing in most cases will be sufficient for the remaining treatment.

"*In fractures about the knee-joint* and in cases of *synovitis*, where a posterior splint or knee-cap is needed in order to keep the limb in a straight or semi-flexed position, this mode of forming a splint can be made use of and answers better than the gutta percha. We have applied it to one case of synovitis after the acute symptoms had been subdued by the means of extension and counter-irritation, and it formed a very good posterior splint. *In fractures of the tarsal bones* it may likewise be used with advantage. Here it should be long enough to envelop the foot as far up as the toes.

"Two cases of *fracture of the astragalus* have been treated in this manner with good results.

"For *fractures of the lower jaw*, it can be made use of to construct a splint in the usual manner.

"In *fractures of the neck of the humerus*, where a shoulder splint, as recommended by Hamilton, is necessary, this may be made use of; it would make a much better and cheaper splint than the gutta percha, and it would fit the shoulder more accurately than any wooden splint that could be made.

"In *fractures of the shaft of the bone* it may also be used. It should be long enough to extend from the shoulder to the hand, and applied to the outside of the limb, the limb being flexed to a right angle, and extension being made so as to keep the fragments in position until the plaster 'sets.' If necessary, a small splint made of the same material can be applied to the inner side of the arm, and both bound together with a bandage. The limb, of course, is to be placed in a sling.

"For *fractures at the base of the condyles*, and other fractures in the vicinity of and involving the elbow-joint, which require the arm to be kept in a flexed position, this is decidedly the best mode of dressing. For this purpose angular splints made of tin, gutta percha, or pasteboard, are commonly used, and all require some little time for their construction. The plaster of Paris splint can be made in five minutes, and will fit itself to the inequalities of the arm more accurately than any other.

"Although we have had no opportunity of witnessing its application in cases of *club-foot*, we may venture an opinion that no better shoe could be constructed, and none which would fulfil more indications after tenotomy has been performed, than by these accurate mouldings to the limb. During and for a while after the application of this dressing, due attention should be paid to adjustment of the foot. The gutta-percha shoe, which is more troublesome to make, and certainly in many respects not as good, might thus be dispensed with."

Dr. L. recommends this mode of dressing in all instances where dispatch is important. "Many valuable lives," he remarks, "perhaps might be saved, and much suffering certainly alleviated upon the battle-field, by a resort to this expedient. No great amount of surgical skill is requisite for its use, and not much room need be taken up in the packing away of the plaster in its dry state, proper care, of course, being taken to prevent the contact of moisture. Again, the art of its application, if such we may style it, can be very readily communicated to any of ordinary intelligence, such, for instance, as those presumed to compose an ambulance corps. Patients with limbs dressed in this manner might be transported comfortably."

Poisoning by Aconite—Successful Use of Nux Vomica as an Antidote.—In a preceding part of this No. (see p. 276), we have given some experiments made on animals to ascertain the applicability of aconite for the relief of poisoning by strychnia, and remarked that observations on the human subject were required to confirm the antagonistic action of these articles.

Such confirmation is afforded by the following case, related by Dr. D. D. Hanson (*Boston Medical and Surgical Journal*, September 26, 1861):—

The subject of it was a coloured boy, 5 years of age, who surreptitiously took a mixture of tincture of aconite and simple syrup. When seen by Dr. H.

he was "comatose, the eyes half closed, expressionless, the pupils insensible to light, though not much dilated. The pulse was feeble and irregular, respiration requiring artificial aid to support it, and the muscles and ligaments so much relaxed that he could neither stand up nor sit unless supported. His respiration finally degenerated to a gasp, occurring five or six times the minute, then he would convulsively straighten out in the lap of his attendant, throw his head and shoulders back, and his hands over his head, as if, mechanically, to get a longer and fuller inspiration, then relax into the same state as before.

"No time was lost in getting his feet into hot water, sinapisms on the soles of the feet, calves, and over the abdomen and chest. I failed in my attempts to get an emetic dose of mustard into the stomach, from its bulk and difficult deglutition. Ipecac and antimony being the least bulky of anything at hand, I forced down a double dose; soon after I irritated the fauces with a feather. Fifteen minutes passing, and no signs of vomiting having appeared, I repeated the dose, and irritated the throat as before. No retching occurred from this at the expiration of half an hour from the first dose, the respiration grew more difficult, and the pulse became imperceptible at the wrist. He was sinking, evidently, and the emetics were aiding the poison instead of the patient, as the muscular fibres of the stomach were rendered insensible to expulsive stimuli by the depressing influence of the poison, and the difficult respiration and deglutition were referable to the operation of the same cause upon the diaphragm and pharynx. The case now appeared desperate, unless these tissues could be excited, and nux vomica was manifestly capable of producing this effect, as its full therapeutic action was the exact opposite of that now dominant from the poison. Impressed with this idea, I gave him three drops of the tincture of nux vomica; I then placed my finger upon the wrist and awaited the result. My pleasure can be well imagined when, in a few minutes, I felt the heart's impulse returning with accelerated vigour as the tincture became more and more absorbed, and the respirations were correspondingly improved in steadiness and depth. At the end of twenty minutes I repeated the dose, soon after tickling the fauces with the feather. Retching was soon induced, and vigorous emesis followed. After this operation, young ebony opened his eyes, and after satisfying himself that matters were progressing circumspectly, he coolly lay back in the lap of his attendant, with a quiet and steady respiration and pulse. I remained half an hour longer, when I considered him safe, and left him, with directions to take three drops once in three hours during the night, allowing him to sleep during the intervals if the breathing continued regular. The next day I found him sitting in a chair, and apparently fully recovered, having rested well during the night, and taken light nourishment during the day. I left him two drop doses of the tincture for meal times during three days, to insure perfect tone of the muscles.

"As corollary to this, I think it may be said that nux vomica is a complete antidote to aconite, and, conversely, that aconite is equally an antidote to nux vomica."

—

Hydrargyrum Cum Cretâ.—The unreliability and sometimes harsh action of this preparation has for some time past attracted the attention of physicians, and the subject having been brought to the consideration of the Berkshire District Medical Society, Dr. SAMUEL DUNCAN was requested to make a chemical investigation of the article. In his report, recently made, he presents the following conclusions:—

"1st. When this preparation of mercury is exposed to the light, especially during the summer, a portion of the suboxide which it contains, is decomposed into the metal and red oxide (protoxide), which, in sufficient quantity, always acts as a violent irritant poison.

"2d. That the older the preparation, and longer the exposure to light, the less the mercury, and greater the amount of the oxide.

"3d. That in order to have a perfectly reliable article of hydrargyrum cum cretâ, it should be made of pure material, kept in a cool place, and excluded from the light.

"4th. That freshly made and light-coloured specimens are best, and those of a deep colour should be rejected.

"5th. That this preparation is unstable; that it tends to separation by the volubility of its mercury, and the superior mobility and gravity of its particles.

"6th. That we have no reason to suppose that mercury, however pure, exerts any influence on the system in its metallic state: but that it must first be converted into an oxide, and this oxide must be basic to a soluble compound; and that the amount of suboxide in hydrargyrum cum cretâ is not at all injurious, providing, however, it remains as such; and that when this preparation proves an *irritant in itself*, it is due to a higher degree of oxidation."

Dr. HENRY M. SEELY, who has made a chemical analysis of some specimens of the hydrargyrum cum cretâ, reports that a specimen he analyzed, "which originally should have contained 37.5 parts of metallic mercury, 22.25 parts had changed to the red oxide, and 4.05 parts to the black oxide, leaving less than a third of the metallic mercury in its original condition.

"With the knowledge of such a change in the character of the metallic mercury before us, we need look no farther," says Mr. S., "for the cause of the alarming result attending the use of long-kept samples of hydrargyrum cum cretâ; the oxide existing in the powder produced by the gradual oxidation of the finely divided particles of mercury, probably being converted in the fluids of the stomach into compounds of a more energetic character."—*Berkshire Medical Journal*, November and December, 1861.

—

Solution of Persulphate of Iron in Bright's Disease.—Dr. WHITE, at a recent meeting (Oct. 1) of the Buffalo Medical Association, called attention to the use of the solution of persulphate of iron in albuminuria, and related a case in which he had employed it in doses commencing with fifteen drops, three times a day, and gradually increasing it to forty drops, with marked benefit.

—

A New Hæmostatic; the Pengawar-Djambe (*Palea Cibotii*). By E. H. JANES, M. D.—This new hæmostatic is derived from the stipes of a fern of Java, and consists of very soft, delicate filaments, flexible, and so light as to float in the air for a long time. They vary in colour according to their thickness, from a golden, light brown, to a dark gray or blackish. It is said that six grains form a mass sufficient to arrest bleeding from an artery one line in diameter. It absorbs water so readily as to sink in about half a minute. When subjected to heat, it yields an empyreumatic odour, and detonates under combustion. Its styptic effects are supposed to depend upon its capillary attraction overcoming the force by which the water in the blood is held in combination, the immediate consequence of which is the coagulation of the remaining portion of the blood, by which, together with the elasticity of the filaments, now enlarged by the absorption of fluid, a firm adhesion of the coagulum to the surface of the wound takes place, causing a firm closure of the mouths of the bleeding vessels. The advantages claimed for it over other styptics are, that the effect is quicker, that it produces a coagulum where other agents have failed—as in carcinomatous or scorbutic ulcers, and that it does not retard the healing process. When used, it should be crumbled, and a sufficient quantity (five grains to a scruple) pressed for a few minutes directly on the bleeding surface, afterwards applying a suitable compress. By this means it is made to penetrate into the finest apertures on the surface of the wound, causing instant coagulation of the blood oozing from the smaller vessels, and said to be reliable in all cases where the divided artery does not exceed a line and a half in diameter. Whether experience will substantiate what authors have told us concerning this much extolled styptic, remains with us to be seen.—*New York Med. Times*, Dec. 21, 1861.

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Gross's System of Surgery.—Just as this sheet was preparing for press, we have had placed in our hands a second edition of this elaborate work. We shall notice this edition particularly in our next Number, but may mention at present that the work has been entirely revised, much new matter introduced, and nearly three hundred illustrations added.

We are pleased also to find that the subject of gunshot wounds, which are now invested with such fearful interest for us, has had especial attention bestowed on it.

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This volume is destined to take a conspicuous place among the most valuable original contributions to American medical literature. We therefore cheerfully recommend it to the attention of our readers.—*Southern Med. and Surg. Journal,* April, 1861.

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Proceedings of the Academy of Natural Sciences of Philadelphia, October, November, December, 1861.

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Thirteenth Annual Report of the Regents of the University of New York, on the Condition of the State Cabinet of Natural History, and of the Historical and Antiquarian collection annexed thereto. Made to the Senate April 10, 1860. Albany, 1860.

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Border Lines of Knowledge in some Provinces of Medical Science. An Introductory Lecture, delivered before the Medical Class of Harvard University, Nov. 6th, 1861. By Oliver Wendell Holmes, M. D., Parkman Professor of Anatomy and Physiology. Boston: Ticknor & Fields, 1862.

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